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INDEX TO VOLUME LVI

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# INDEX TO VOLUME LVI

JULY TO DECEMBER, 1929

This is an alphabetical index of articles and discussions arranged by leading words. It contains occasional cross references. Names of authors and men who discussed the papers are also included. Details of society proceedings, including the titles of papers read, officers

elected, etc., can be located in proceedings under Societies, Editorials, News of the State, Marriages, Deaths. The subjects of editorials also appear alphabetically and are marked (E).

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# ILLINOIS MEDICAL JOURNAL

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## Editorial

### THE PEORIA MEETING—

The Seventy-Ninth Annual Meeting of the Illinois State Medical Society was held in Peoria from May 21 to May 23, 1929, with an attendance greater than at any previous down-state meetings. There were 1,228 registrants. Check-up showed that at least one hundred failed to register during the meeting. Increasing popularity of the meeting for the ladies was demonstrated through a women's registration of 226. The Women's Auxiliary is a factor worthy of consideration in planning the future as the auxiliary conventions will be larger each year. Arrangements for future years consider this section. The Peoria Medical Society, The Committee on Arrangements, the Association of Commerce, the hotels, the City Officials and business houses of Peoria cooperated to the greatest extent possible in making the many guests welcome in Peoria.

The opening session on Tuesday evening was well attended. The address by Dr. M. L. Harris was received with applause, and many favorable comments by physicians and laymen. The Annual President's Banquet holds the record as the largest function of its kind in the history of the Society. Attendance exceeded five hundred. The banquet was one of the most interesting sessions. Dr. John E. Tuite, the honored president was the recipient of a beautiful present from his Winnebago County friends. Following the banquet, the president's address was heard and was a most interesting contribution to the literature on Medical Economics, on the subject of "The General Practitioner". This was followed by the Oration on Medicine by Stewart R. Roberts, of Atlanta, Georgia. He talked on "The Diagnostic Relations between Gall Bladder Diseases and the Heart". The subject was presented to a large and appreciative audience, and in a competent and pleasing fashion. The Oration in Surgery was given Wednesday afternoon by J. Shelton Horsley, of Richmond, Virginia, and on the sub-

ject "The Mimicry of the Symptoms of Peptic Ulcer". Attendance at this oration overtaxed the limit of the spacious meeting place.

The invited guests in each section were greeted with cordiality and spoke before good audiences in each case. The scientific programs were balanced, and according to the plans in every detail. The symposium on Obstetrics on Wednesday afternoon was before a large group and was highly interesting. Sections on Medicine and Surgery had a joint session for this symposium. The House of Delegates met on Tuesday afternoon for the first meeting for the routine business of the Society. Dr. Louis E. Schmidt of Chicago, who was expelled from membership in the Chicago Medical Society on April 9th, on a charge of unethical conduct, appealed to the Council, and to the House of Delegates. The Council sustained the action of the Chicago Medical Society, on Tuesday morning, and during the afternoon Dr. Schmidt personally appeared before the House of Delegates and was given ample opportunity to review his case. The Chicago Medical Society was represented by its Secretary, Dr. Jas. H. Hutton. After the case was thoroughly discussed, the House of Delegates unanimously sustained the actions of the Chicago Medical Society and the Council.

At the second meeting of the House of Delegates on Thursday morning, the following officers were elected.

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At the last meeting of the Council on Thursday, Dr. Wm. D. Chapman, Councilor for the 4th District, who had been elected President-elect offered his resignation from the Council, which was accepted. The Council then elected E. P. Coleman, of Canton, to fill the unexpired term of Councilor for the 4th District.

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The Commercial and Scientific Exhibits were unusually good, and numerous. This feature of the meeting is one that will make it difficult for many cities hoping to entertain the Society, as



it will take a large building to house the many exhibits which are shown at the meeting.

The House of Delegates gave a preferential vote in favor of Joliet for the 1930 annual meeting, subject to a thorough investigation by the Council to see that definite and adequate arrangements can be made. Details will be announced after the next meeting of the Council on June 3rd.

The *Seventy-Ninth Annual Meeting* as viewed from all angles presents itself as replete with harmony, enthusiasm, inspiration, education and good fellowship. This is but further proof of the firm and enduring foundation upon which medical organization in Illinois is built. This meeting demonstrated once more the fine spirit of co-operation existing between the members of the profession in this state and also the necessity for continuing that spirit. Finally, a review of that meeting leads to the happy conclusion that the future of medical organization in Illinois promises to become, even more successful than in the past, exceptional though such an achievement may seem.

#### DR. WILLIAM D. CHAPMAN'S TESTIMONY IN WASHINGTON IN OPPOSITION TO THE NEWTON BILL

Statement of Dr. William D. Chapman, chairman of the council of the Illinois State Medical Society, before the Interstate and Foreign Commerce committee, Washington, D. C., January, 1929, as follows:

Doctor Chapman: Mr. Chairman, I am a general practitioner of medicine in a small town in Illinois. I speak here as chairman of the council of the Illinois State Medical Society and speak for that society.

With so limited a time—

The Chairman (interposing): I am very sorry it is necessary to limit your time.

Doctor Chapman: With so limited a time, my discussion of the bill itself, with the permission of the chairman and of the committee, will be limited to reading a one or two page letter written by myself about a month ago. I will let that answer for my discussion of the bill.

The balance of the time I shall spend in the building of a perspective with reference to the Newton bill.

The perspective with which we approach these

things makes all the difference in the world in the results which we see.

The Illinois Medical Society has opposed the Sheppard-Towner bills of the past and the Sheppard-Towner Act as it was enacted for the reason that we thought we saw an emanation from a school of social thought which was not good for either the American public or the American Government or the men who were charged with the care and welfare of the sick.

This present bill, we think, is an outgrowth of the Sheppard-Towner Act. The practice of medicine consists of the observation and interpretation and correlation of physiological data, and of treatment chosen and applied when physiology is wrong or when pathology appears.

The practice of medicine belongs to a group of men trained in these things and in evaluation.

It is true that every true science is followed by a pseudoservice, and that is true in the practice of medicine.

The care of maternity and infancy is the practice of medicine for the reason that this observation and correlation and interpretation of the facts of physiology and pathology are needed during the period of pregnancy, as during other periods of life. Aside from errors of physiology or anatomy or pathology, pregnancy is a normal physiological proceeding which needs no care beyond the same general hygiene of other periods.

Aside from the practice of medicine there is nothing in the care of maternity of infancy except economics, and economic welfare and physical welfare have become so sadly mixed in the minds of so many people that great confusion has resulted in the legislation of the past few years.

We have regretted that and have endeavored to state our viewpoint clearly wherever possible. The perspective is the important thing.

That welfare workers or economists should attempt the practice of medicine is somewhat unfortunate, and it has also led to much confusion. That their efforts should be bolstered by false statistics—I have heard some mention made of false statistics this morning, and there is other mention which I did not hear—but that any false statistics should be used is extremely unfortunate. It so happened that at the time the Sheppard-Towner bills were up for consideration a change in the method of reporting

statistics in this country was undergone. It is true, and has been since about 1922, that figures for maternal deaths are increased very largely over what they were before in this country, on paper.

At the present time, if a woman has tuberculosis for 15 years and dies of tuberculosis at or near the time of the birth of her child, either days before or days after, that death is reported in the maternity figures, where it does not belong.

Mr. Burtness: Who is responsible for that?

Doctor Chapman: I do not know who is responsible. It came at the time the Sheppard-Towner bill was under discussion, and was an unheard-of thing theretofore in the collection of statistics.

Mr. Milligan: How did you get that information? How do you know that it is not charged to tuberculosis and is charged to childbirth?

Doctor Chapman: My own information came from Dr. Charles E. Mongan, of Massachusetts, who had made some extensive research in connection with the collection of statistics.

Mr. Burtness: Does not the attending physician report the cause of death?

Doctor Chapman: He reports a cause of death, but frequently—

Mr. Burtness (interposing): Does not he report the cause which he regards as the paramount cause, if you can call it that?

Doctor Chapman: Yes, sir; but frequently he is instructed, or has been for the past few years, to change that to read in some other way which conforms to the international list.

Mr. Burtness: By whom has he been instructed?

Doctor Chapman: By the registrar of the State, in Illinois. I have received death certificates back from the registrar of Illinois with the request that I change the wording to make it conform to the international list of causes of death in order that Illinois may not be in conflict with its rights and privileges as a member of the national registration area. Its figures are accepted as statistics by the Federal Bureau of Statistics. If it is not reported as instructed then Illinois loses its standing on the Federal registration area.

Mr. Burtness: I think I may be justified in

mentioning a specific case and asking you as a medical man how that would be reported.

There was a very tragic death in Washington just a few days ago, in Congressional circles. A woman was suffering from pneumonia, with both lungs congested. In the forenoon she gave birth to a child, and in the afternoon she died.

Assuming that those facts are correct, how would you, as a practicing physician, report the cause of that death?

Doctor Chapman: I would report the cause of that death as pneumonia, but I would expect at the present time to be requested to change it. But whether I changed it or not there would be a line below the statement of the primary cause of death, with a statement showing secondary cause, complications of labor, childbirth, or something like that, and I would expect it to be tabulated in that way.

Mr. Burtness: Why would you expect that? I think it is important to know that, to find out whether your charge is correct.

I agree with you that under the circumstances that I have indicated it would seem that the paramount cause of death in that case was pneumonia and ought to be reported as such, with the complications that existed. If there is some one with some ulterior purpose, or otherwise, attempting to make such changes as you suggest, unsustained by the best practiced of medical men, you are making quite a serious charge, and it ought not to be made unless there is some good evidence to support it.

Doctor Chapman: I am well aware of that. It is a matter upon which we have done considerable wondering in Illinois.

Mr. Burtness: Is it not in the hands of the medical profession largely to see that that situation is corrected, if it does exist?

Doctor Chapman: We can make an effort, and we will continue to do so.

Mr. Newton: On that point, let me ask you this question. The impression I gained was this: take, for instance, in the case of influenza where there is also a case of pregnancy, with confinement in the next two months. That makes a very serious danger to the prospective mother. That is so, is it not?

Doctor Chapman: That is true, and more especially to the baby.

Mr. Newton: Yes. Whereas in a case of flu



itself without that complication the chances of recovery would be most excellent. But even a slight attack of real influenza is very apt to prove fatal in a case of pregnancy.

Doctor Chapman: I know of no reason why it should be more fatal for a pregnant woman than for any other woman.

Mr. Newton: That is the general impression I have gotten from what a number of doctors have told me.

Doctor Chapman: I suspect that those same doctors would be willing to tell you that they know little about influenza.

Mr. Newton: That may be true, and if laymen have a doubt about it, with the best information we can get, when you have a combination of that kind, as long as you doctors do not know what influenza is, is it not rather a difficult matter to say which is the cause of death?

Doctor Chapman: It is extremely difficult. It is a very nice point, but the medical profession is best equipped to deal with it. But many things of that sort have been taken out of the hands of the profession quite largely.

That is a point of perspective which I wish the members of this committee might get. The medical profession, the men who practice medicine, know that their knowledge of physiology is relative knowledge entirely and not absolute knowledge. Until we know physiology in a fashion which we do not up to now, medical practitioners must continue to weigh and to distinguish between the relative and the absolute. Treatment must often be used which the practitioner knows is merely the best available at the present time; and he uses it bearing in mind that 10 years from now that may be recognized as entirely wrong.

The lay health worker is prone to accept as plain straight facts what the medical profession teaches today, because they may have it from the pen of perhaps the greatest medical authority in the land. The man who wrote it and the professional men for whom he wrote it reserve the fact in mind that his knowledge was relative, it was the best that he had, and it had to be weighed and evaluated to the best of his ability. A profession trained in this evaluation can use relative knowledge. A profession untrained, or an economic profession, in evaluating relative

and absolute knowledge, finds itself groping about in a strange field, and the care of mothers and infants has not been improved by it. In all the physiological processes, the men who practice medicine know that the time always comes when we come back to the spark of life, about which we know nothing; we say, "this organ performs that function, because it is activated from this source," but presently we always get back to, "Oh, it is the spark of life that does that." It is a point that is not recognized by the lay health worker, and it has frequently led those workers very far astray in their efforts. The temptation to go from physical welfare to economic welfare has been so great as to make much confusion. I can not, with my limited understanding, comprehend why this Newton bill, for instance, should belong to a busy railroad committee, rather than to a committee dealing with public health affairs.

Mr. Newton: Doctor, of course, you do not understand that this committee has jurisdiction over public health measures.

Doctor Chapman: Oh, it does?

Mr. Newton: That is the reason why this bill was referred to this committee.

Doctor Chapman: Thank you for clearing that up. I had really wondered why it was. To my mind it is elementary that anything having to do with the public health, the physical welfare of the country, should belong to our Public Health Service, as it does in the States, rather than to a Department of Labor with major economic interests. The organized health service of any nation or State should work through definite channels; and by way of discussion of the bill itself, if you will permit me, I will read from a brief letter written by myself to the editor of the ILLINOIS MEDICAL JOURNAL, which, I think, will be sufficient:

"As I read it, the bill proposed that the United States commit itself and embark upon a permanent policy of doing certain work in individual States, whereas constitutional authority and practice have until now—or, rather, until recently—held Federal action limited to interstate responsibilities. The provision that Federal money may be expended at will and in the whim of a single bureau officer, in cooperation with local associations of individuals (extra-governmental individuals), should be sufficient to

brand the entire proposal as a gold digger's phantasy. I seriously doubt that responsible agents of government will be found so credulous as to permit such an arrangement: certainly I hope not. The money which the bill proposed in this fashion to appropriate would come necessarily from tax collections, of which we are told that some 95 per cent comes from 12 states. The expenditure outlined would rest with the whim of one individual, and not only might be but evidently is intended to be disproportionate among the several States. It is within the bounds of conception that Illinois, contributing about 8 per cent as one of the twelve might receive nothing at all in return, whereas States contributing little might receive maximum sums. In the matter of an advisory committee, which the bill defines as being for show purposes only, I should take exception to the provision which prescribes that one member shall be a State health officer belonging to the conference of, etc. That seems a very ill-advised class recognition of extra governmental groups. If it were to be accepted as proper legislation, I would wish to amend that one member of the Illinois Medical Society and one member of the Ministerial Alliance, and one member of the Penobscot, Me., chapter of the American Red Cross, if any, be included in the make-up of the committee. These organizations have equal rights with any other mutual conference. Section 4 gives the inference that there is a plan to work with and upon individual children in the United States, except where specifically prohibited by the parent or guardian of an individual child. Such a plan can operate only upon the assumption that a child is the property of the State. That is a thing which I deny and which should cause alarm to the parents of children and to all American economists. The family is our unit of government, and should be closely guarded against inroads of social thought. Whenever such inroads shall have been quietly perfected, then our Government will be seen to have abdicated in favor of a communist revolution—not a desirable thing. To me it seems elementary that work pertaining to the public health or to the physical welfare of citizens should fall to our recognized Public Health Service rather than be appended to the Depart-

ment of Labor, with its normally economic major interests."

Now, I thank you, gentlemen, and I shall not take any more time: but if that presentation should have prompted new questions in the minds of members of the committee I shall be very glad, indeed, to attempt to answer them or to say that I do not know.

Mr. Newton: Illinois has a State public-health officer?

Doctor Chapman: Yes, sir.

Mr. Newton: Is he a member of this conference of State public-health officials?

Doctor Chapman: I have never inquired. He should be, I imagine, from the sound of the name.

Mr. Newton: So that there is really nothing exclusive about it; it embraces every State public health officer in the United States?

Doctor Chapman: The fact which struck me forcibly was that it was a mutual conference, entirely separate from all the mechanism of Government; it is a mutual conference.

Mr. Newton: Well, they are all public officials?

Doctor Chapman: These men happen to be, but they are not members of this conference officially. Therefore this conference certainly should not receive recognition as a governmental agency.

Mr. Newton: What do you say about the advisory committee that the director of the Veterans' Bureau has among medical men?

Doctor Chapman: I do not know much about it, sir. In what particular do you mean?

Mr. Newton. He has an advisory committee that advises him in medical matters.

Doctor Chapman. The method of the formation of the advisory committee would be a most important item, I should think, concerning any advisory committee which would bring it back again to this particular advisory committee proposed in the Newton bill. That committee is advisory entirely, with no authority to instruct the director, and is so picked that it is possible for the director of a single bureau, not only to dominate the committee, but to choose the majority of the committee. It is not an open committee with legitimate functions; it is an advisory committee with no powers.

Mr. Newton: The present committee is a



committee of three, and they have the head of the Children's Bureau, the Commissioner of Education, and the Surgeon General of the Public Health. Not only is it advisory but it is executive. Have you heard of their dominating the one lone medical man of that three?

Doctor Chapman: I have not been informed as to the details of what goes on there. It is perfectly possible for two on a committee of three to dominate it at any time that they wish; that is always possible.

Mr. Newton: The Surgeon General does not seem to have any fears of that; he has been working with them for eight years.

Doctor Chapman: Fortunately the Surgeon General is a very kindly disposed and diplomatic gentleman, and he is able to get along with his work. I should suspect that the poor Surgeon General has his trials and tribulations at times.

Mr. Newton. And would you be just as charitable with the Commissioner of Education and the head of the Children's Bureau as well as with the Surgeon General?

Doctor Chapman: I would be equally charitable.

Mr. Newton: You think you would?

Doctor Chapman: I think that I should. The point with an advisory committee and executive committee would be that they should have some power and that the choice should be open, but any discussion of details of application would change nothing of an opposition to a general plan.

The Chairman: We are much obliged to you, doctor.

Doctor Chapman: Thank you, sir.

Mr. Merritt: Just one question, doctor. The distinct difference between the new bureau and the existing bureau is that the new bureau has unlimited power over appropriations.

Doctor Chapman: Unlimited power of distributing funds, under the whim of one person. And, further than that, a possibility which was probably undreamed of at the time the Sheppard-Towner Act was enacted, the Federal Government, through this one single individual, may co-operate with any individual or any State, who in turn may, at the request of the bureau director, put up a sum of money to be matched by the Federal Government to conduct any pet plan which

the official or individual may wish to put over regardless of whether it is a good plan or a bad plan, the judgment to rest with one individual. Granting that the individual director of the bureau at the present time, or at any other given time, is an able and right-minded citizen, because succeeding directors of that bureau may judge things with an entirely different view, and the appointment is not one of public health welfare, but is one of politics.

The Chairman: We are much obliged to you.

Doctor Chapman: I thank you.

The Chairman: I would suggest, Mrs. Park, that we will have to adjourn as soon as the bell rings, which will probably be about a quarter after or 20 minutes past 12: so I suggest that you put on your Star witness at this time.

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#### DR. WILLIAM C. WOODWARD'S TESTIMONY IN OPPOSING THE SHEPPARD-TOWNER NEWTON BILL

Dr. William C. Woodward, Bureau of Legal Medicine and Legislation, American Medical Association, before the Interstate and Foreign Commerce Commission, Washington, D. C., January, 1929, in abstract as follows:

Doctor Woodward. I think they have some bulletins that are available for circulation. When they were prepared I do not know. But they are doing no active work, such as the Children's Bureau is doing.

We have talked a good deal in generalities this morning, but the question is, of course, on this particular bill. I have taken the trouble to go over it with some care, and these are some of the salient points about it that should be borne in mind.

The Sheppard-Towner Act is an act for maternity and infancy. This bill covers a vastly extended field; it covers all mothers and children. That, of course, includes everyone who is a mother, everyone who is a child. There should be some definition, obviously, some limit placed on those terms.

The Children's Bureau under the bill can engage in "welfare" work. "Welfare" is a very general term. That is why I said that this was not strictly a medical bill; welfare work includes child labor, education, and many other factors.

Let us have some definition of "welfare" if the bill is to be reported.

The appropriation is for \$1,000,000 a year, not to exceed \$1,000,000. It is for an indefinite period. If it is necessary to authorize appropriations, why limit them, and why not let each Congress determine for itself what it will appropriate? And if appropriations for the benefit of public health of any kind are to be authorized, it seems to me that the logical procedure is to authorize the making of appropriations within such limits as each Congress sees fit to fix and to allow each State to determine for itself what is the most important public-health activity in which it can engage. Some jurisdictions might find more urgent problems than maternity and infancy work.

There is nothing here that would prevent the Children's Bureau working outside of the group made up of mothers and children, because the bureau is instructed to aid in the reduction of infant mortality. That, as well as the term "Welfare and hygiene," would justify the bureau in taking jurisdiction over all manner of sanitary and economic conditions that would diminish infant mortality and promote welfare and hygiene.

This bill provides that the money appropriated under it may be expended either independently of a State or in cooperation with the State. The Sheppard-Towner Act recognizes the fact that the Federal Government has no right to engage in child welfare activities within the State except as the State may consent. It provided that the legislature of the State should pass on the question and grant permission. This bill expressly authorizes a Federal bureau to go into a State and engage in activities independently of the State. It seems to me, under the decision quoted, *Hammer versus Dagenhart*, I think it was, it is very questionable—at least questionable—whether the Federal Government can send its agents into a State without the consent of the State and set up child welfare agencies, look after its milk supply, and do other things that are necessary to protect the health, or that some agent of the Federal Government thinks are necessary.

This bill provides that the work may be done in cooperation with State or territorial agencies. Obviously that is somewhat of a come down from

the Sheppard-Towner Act, which required that the legislature itself should pass on the question whether the Federal Government might send agents into the State. Here it is for any State or territorial health officer to pass on that question.

This bill provides for an allotment of funds. That means, of course, that the bonuses, gratuities, stipends, whatever you may call them provided by the Federal Government, will be granted at the discretion of the Chief of the Children's Bureau. The Sheppard-Towner Act was very careful with respect to matters of that sort. It not only fixed a certain amount to which the State was entitled, but it also placed the determination as to whether the State should get anything or not, primarily on an independent board made up of the Surgeon General of the Public Health Service, the Commissioner of Education, and the Chief of the Children's Bureau. It was not left to a single person to determine where and when and how the money should be spent.

There is a peculiar provision here that ought to be carefully scanned, which authorizes the acceptance of donations from child welfare or other local associations of individuals. When a Government officer may tie up private money from indefinite sources with Government activities there is grave danger of the Government being used to carry on a private propaganda, and danger of giving the advantage to the States that are richest, because they can offer the largest bid for Federal funds.

The advisory committee proposed in the Newton bill is merely advisory. The board that exists under the Sheppard-Towner Act is a board that is in primary control of the situation, not a board that can advise and do nothing else. The advisory committee under this bill consists of nine members. The chief of the Children's Bureau is one member and five other members she is to appoint; and the board is to be appointed to confer with a member of the board itself, the chief of the Children's Bureau. The provision obviously is an illogical and improper provision.

I have no quarrel with the Conference of State and Provincial Health Authorities of North America. I was a member of the conference for many years. I am ex-president and am an



honorary member of it. But when it is provided that at least one of the members of the proposed advisory committee shall be a State health officer belonging to the Conference of State and Provincial Health Authorities of North America, I think we are going on dangerous ground. The Conference of State and Provincial Health Authorities of North America is a purely private, voluntary organization. To say to a man who already has the seal of approval of the State put on him by the State when he is appointed a State health officer, that he is not eligible for a certain Government position unless he receives the approval of this private organization or any other private organization, is contrary to the ordinary principles of public administration.

So much for the bill itself. Our objection, as has been pointed out, is to the fact that it takes medical work and puts that work under lay domination. The medical profession thinks that that is to the detriment of the work. We think it is wasteful of money to undertake to do work in that way. We are citizens as well as doctors; and some of us believe that the injection of the Federal Government into intrastate health activities subversive of our present form of government. Its tendency is to break down the dual form of government under which we exist. The fact that the Federal Government makes appropriations on the half-and-half plan or some other plan for good roads, is not to the point. The Government has specific authority with respect to the maintenance of post offices and post roads, and it needs roads for military purposes. The fact that it makes other appropriations, for the protection of forests, for instance, is not to the point, because the Government itself has enormous forest areas that must be protected. The fact that it takes steps to eradicate tuberculosis in cattle or eradicate the corn borer is not to the point, because the Government is charged with authority over interstate commerce, which includes interstate quarantine, and we know that in some cases the point at which to prevent the spread of the disease from one State to another is at its source. There are appropriations that have been made for purposes that are not so clearly within the Federal province as those I have named, but because in some instances appropriations have not been wisely made, or have been made outside of the Constitution in such

a way that even the Supreme Court can not pass on their constitutionality, is no reason why the method should be continued and enlarged.

I believe that if you will make a reasonable appropriation for the Public Health Service, for investigating the causes of infant and maternal mortality, and for the dissemination of information regarding those causes, you will do all that need be done.

So far as relates to the alleged inability of the States to pay for such work, you can not fairly even guess what they are able to pay. One State has been mentioned as in financial distress—the State of South Dakota. Probably some of you know why South Dakota is in financial distress. Because through the system of government that the State followed for a time it has been brought to financial distress, must the Federal Government put its hand in its pocket to relieve it?

And a similar condition exists generally. Because a State elects to appropriate largely of its funds for purposes other than the protection of its babies and its mothers, is it thus going to compel the Federal Government to come to its aid and relieve its distress? I think you will agree with me that it ought not.

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## IF MEDICINE IS TO BE SOCIALIZED WHY NOT FOOD, CLOTHING, SHEL- TER AND OTHER NECESSARIES

WHY MEDICINE SHOULD BE MADE THE TARGET  
BY PROFESSIONAL ALTRUISTS HAS LONG  
BEEN A MYSTERY

TRY GORING THE OTHER FELLOW'S OX AND  
ONCE AGAIN IS DEMONSTRATED HOW  
GREAT A JEWEL IS CONSISTENCY

Constant attempts—some frank, others sly—to socialize the American government through the socialization of medicine resolve themselves into the same old two and sixpence, come what may.

Just exactly why medicine should be made the target by professional altruists has long been a mystery to those medical men who fail to realize that the adjuration vetoing the riding to death of a willing horse owes its existence to that same almost ineradicable tendency among men. Because medicine is the most unselfish of professions by virtue of its inherencies, and

approximately in that quality by no other occupation save that of men of the cloth—who in themselves receive that Divine Assistance denied the man of medicine—the general public has come to regard the economics of the entire practice of medicine as a “Let-George-Do-It-Affair.” Further while not endowing men of medicine, the general public has come also to believe that the greatest sin a medical man can commit against ethics, science, and the public weal is to attempt to earn a decent living. Just why grocers and other traffickers in the necessities of life known as “Food, clothing and shelter” who have coined wealth since the war upheaval, should begrudge anything more than a bare subsistence to medical men is an odd quirk in the human mind. The parallel is found perhaps, in the way that many churches starve their ministers. Yet the most delicate and palatable food in the world is of small use to a dyspeptic and raiment like Solomon’s useless to a bed-ridden invalid.

Not long ago a Chicago grocer advocated the socialization of medicine because he contended that doctors make too much money and that medical services should be dispensed at infinitesimal cost. Few medical men are rich; and a remarkably small proportion of this class is even comfortably well-to-do, in sharp contrast with the status of grocers or business men in general.

To repeat a quotation from Henry Swift Ives in this regard will not be amiss.

Says Mr. Ives:

“A Chicago suburban village referred to as a millionaire colony maintains a municipal electric light plant when not one voter in a hundred in this village would for a moment favor the socialization of his particular business.

“In a prosperous middle western city one of the leading advocates of a municipality owned traction line is a prosperous insurance agent, but he bitterly opposes socialists in their effort to force the state into the insurance business.

“A lumberman in the far west is fearful that his state will go into the business of manufacturing fruit boxes for farmers at cost, yet he advocates compulsory state workmen’s compensation insurance to the exclusion of private enterprise and competition.

“A meat packer advocates government ownership of the railroads but fights it for his own business. Numberless instances of similar inconsistencies could be given.

“It is remarkable that in industries most threatened

by government ownership, many of the leaders do not seem to care what becomes of the other fellow in the same boat, provided they themselves keep a few feet ahead of the socialist sheriff with his writ of ejectment.

“The real issue in America today is not whether certain industries shall be socialized, but whether the institution of private property shall be maintained.

“It is too much to expect people to take seriously protestations of one industry against government ownership when we find the leaders of that industry advocating government ownership of somebody else’s business.”

There is no more reason why medicine should be socialized than there is for the socialization of every other industry. People are just as much entitled to free groceries, free clothes, free shoes, and every necessity of life as there is for free medical attendance.

Socialism will wipe out the rights of the individual and destroys the initiative and self-reliance which is the bulwark of our country.

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#### GRATUITOUS SERVICE OR EVEN SEMI-GRATUITOUS SERVICE TO PERSONS EARNING UPWARDS OF \$6,000 PER ANNUM IS FALLACIOUS

Financial support of an institution inherently socialistic in spirit and diametrically opposed to what the medical profession in its thinking majority agrees is for the best interests of public health and welfare is a drastic step towards undermining the constitution of the United States and an uncalled for effort of misplaced philanthropy. A recently announced proposition was both startling and alarming.

Certainly in those families in which the income amounts to as high as \$6,000 per annum, either gratuitous or semi-gratuitous gifts of medical service, or hospital attention are as uncalled for as would be similar beneficences of food, clothing, or shelter. There is no business man in any civilized country who would not be shocked at the idea of effecting a similar distribution of bread, shoes or lodging space. Yet when the question of medical service is taken into account, the best of business men appear to find it difficult to decide where charity leaves off and socialism begins. Gratuities that teach dependency, destroy self reliance and ultimately engender belief in a socialistic state, loss of all initiative and destruction of a sense of responsibility are gratuities that not only shatter the



stability of a nation but wreck the stamina of individuals.

There is an amount of charity service extended by physicians and hospitals that is equalled by no other body of men in the world. And though the medical profession itself is not endowed, though physicians pay standard prices for all necessary commodities of existence, and it may be remarked in passing, that food is oftener a requisite for health than medicine, yet the physician is the first man who is supposed to give his time, his service, his stock-in-trade for nothing.

To secure supplies for their indigent poor, all charitable societies and public agencies expect to make at least partial payment.

Even pharmaceutical supplies come on the "pay" list, but the physician is supposed to be the one non-paid element in the whole scheme. To extend this service to families whose income runs "up to \$6,000 per year," is one of the most unfortunate of philanthropies. It is in fact, socialism masquerading as philanthropy, and, coupled with the increasing disposition for the laity to practice medicine through corporations, and to impose lay dictation through political governing groups and lay-dictated legislation not only becomes the vicious sort of paternalism that fails to develop citizens, capable of self-government, but affords socialistic forces the best battering-ram ever placed in their hands to destroy effectually not only the constitution of the United States but the democracy itself.

This is no alarmist perspective upon the tendency to encouragement on the part of the laity to socialize the science of medicine, pauperize the citizenry and destroy one of the greatest of American assets, the most exceptional medical service in the world, and at what is an incredibly low price even for men and women of wealth. That motive behind many a plan for medical charity is one of the biggest and noblest is not for an instant held in doubt, but undoubtedly you will agree that while a body of physicians might have the noblest ideas in the world as to the quantities and qualities of bread, of meat, of milk, of shoes, of clothing, of fuel, of housing that should be dispensed to a group of the citizenry, there is no merchant, manufacturer or economist who would stand back of such wholesale wrecking of the structure of trade

and economics under which civilization flourishes.

Great Britain and Germany are suffering now from a somewhat analogous system of "state medicine" the results of which have become as appalling as the original intent was altruistic. It might be added also that in extending charity to families whose incomes run "up to \$6,000" this beneficence would reach not so many of the supposedly poorer class of citizens as it would that "white-collar class" from which statistics show come the bone and sinew of self-respecting, ambitious, proud self-reliant citizens who suffer already from underpayment ratios devolving on the educated, great middle class whose financial status has never achieved recoupment since the war. To pauperize this class would be the greatest error economists could make.

#### MEDDLERS AND THE MEDICAL PROFESSION

THE CHICAGO DAILY JOURNAL AGAIN COMES TO THE DEFENSE OF THE DOCTOR

The *Chicago Daily Journal* has hundreds of times editorially espoused the high ideals and traditions of the medical profession. No other lay publication management in America has shown so keen an insight into medical affairs nor has any other lay publication management so keenly demonstrated a brotherly feeling towards the medical profession. Hundreds of excellent editorials on medical subjects have been published by the Journal in recent years, but none of them have been more apropos and to the point than one entitled "Meddlers and the Medical Profession," which appeared June 26, 1929. We quote:

#### MEDDLERS AND THE MEDICAL PROFESSION

In his inaugural address, Dr. Charles B. Reed, new president of the Chicago Medical Society, made a noteworthy plea for medical liberty. Encroachments of "corporate medicine" as well as a growing tendency to legislate a standard of conduct for the profession, he especially deplored. Medical affairs can not be run according to the principles of mass production in industry nor can they be made to bow before the wishes of non-scientific outsiders.

The ethics of medicine declare for an equal chance among practitioners, for the right of the

patient to choose his own physician, Dr. Reed pointed out. To organize medical groups, which may use all the methods of high pressure salesmanship, is to inject the method of trade competition in a profession where it has no place. The efficient physician or surgeon should not be judged by his cleverness in exploiting himself or in press-agenting his skill. Medical societies, with their rigid standard of ethics, alone are able to prevent unfair methods by the simple expedient of expelling from membership any physician who succumbs to the wiles of the circus publicity man or the box-office expert.

Prohibition was an attempt to regulate the power of the physician to prescribe as he saw fit. The prohibitory principle, if encouraged, may prove embarrassing to physicians. "Can we cure disease by legal enactment?" Dr. Reed asks. "Will the state forbid the use of wheat because it injures diabetics? It is not impossible that an enthusiastic group may spring up and, under the urge of an undisciplined altruism, demand the abolition of sugar or some other hygienic heresy and try to enforce it by legislation.

The claim that outside interference in matters of medical administration is made through a desire to lower the cost of medical care to the patient is patently false. Organizing a medical "trust" would have the tendency to raise costs rather than to lower them. There is hardly a physician in practice who does not treat scores of charity cases each year. One-eighth of the population of the United States is cared for without charge, statistics indicate. In addition, the rates to many patients are based entirely on their ability to pay. No group of men in the country is more concerned with the question of making illness less expensive than are the physicians themselves.

Meddling and "regulating" have become so common in the ordinary affairs of life that there is small surprise when they seek to invade the medical profession. Human interest in the science of healing is at all times intense. For that very reason the laity should be chary about attempting to enforce its conflicting and non-scientific views upon an ancient and proved profession. In matters of health it should listen to experts.

## THE HOUSE OF DELEGATES OF THE ILLINOIS STATE MEDICAL SOCIETY UPHOLDS THE OUSTER OF DOCTOR SCHMIDT

At the meeting of the Illinois State Medical Society at Peoria on Tuesday, May 21, the expulsion of Dr. Louis E. Schmidt from the Chicago Medical Society was upheld by the Council of the State Society and by the House of Delegates.

Dr. Schmidt's appeal was heard first by the Council which elected to have the appeal heard in writing. At the conclusion of the hearing the three Chicago members refrained from voting. The vote to uphold the action of the Chicago Medical Society was unanimous.

An appeal was taken to the House of Delegates by Dr. Schmidt, and after the appeal was heard the action of the State Council in upholding the action of the Chicago Medical Society was concurred in by a unanimous vote.

Another appeal to the Judicial Council of the American Medical Association is still available to Dr. Schmidt. The hearings before the State Society were on questions of law and procedure only, that is, the determination of the fact that the Chicago Medical Society conducted its hearings in accordance with the provisions of the Constitution and By-Laws.

The vote of ouster in both instances was unanimous.

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## Illinois State Medical Society OFFICIAL MINUTES OF THE SEVENTY- NINTH ANNUAL MEETING. PROCEEDINGS OF THE HOUSE OF DELEGATES.

(Peoria, May 21 and 23, 1929)

The first meeting of the House of Delegates of the Illinois State Medical Society was called to order at 3:15 p. m., May 21, 1929, by the President, Dr. John E. Tuite.

The President: The first order of business is the report of the Credentials Committee.

Dr. C. D. Center, Quincy: The Credentials Committee appointed by the Council has certified seventy-eight delegates thirty-three from Chicago, and forty-five from down state. I move

the adoption of the report. (Motion seconded by W. H. Maley, and carried.)

The President: The next order of business will be the roll-call.

The secretary called the roll and announced that a quorum was present.

The President: The next order of business will be the reading of the minutes of the last meeting.

Dr. G. H. Mundt: I move that the reading of the minutes be dispensed with and the minutes as printed in the July, 1928, issue of the ILLINOIS MEDICAL JOURNAL be regarded as the official minutes. (Motion seconded and carried.)

The President: The next order of business is the report of the Secretary.

REPORT OF THE SECRETARY

Members, House of Delegates:

Your Secretary reports the collection of the following sums for the balance of the year 1928, and first four months of 1929, covering the year beginning May 1st, 1928, and ending April 30th, 1929. The first figure being read for each Society shows collections from May 1st to December 31st, 1928, while the second is from January 1st to April 30th, 1929.

Adams .....	536	Jersey .....	48	...
Alexander .....	184	Jo Daviess.....	80	40
Bond .....	88	Johnson .....	56	...
Boone .....	80	Kane .....	864	...
Brown .....	...	Kankakee .....	24	...
Bureau .....	40	Kendall .....	...	...
Carroll .....	8	Knox .....	336	200
Cass .....	...	Lake .....	328	120
Champaign .....	48	La Salle.....	120	536
C. M. S.....	6,376	Lawrence .....	...	32
Christian .....	32	Lee .....	224	8
Crawford .....	...	Livingston .....	272	8
Clark .....	72	Logan .....	144	...
Clay .....	96	McDonough .....	32	200
Clinton .....	104	McHenry .....	...	184
Coles- .....	...	McLean .....	168	485
Cumberland ..	8	Macon .....	128	504
DeKalb .....	148	Macoupin .....	288	24
DeWitt .....	...	Madison .....	128	640
Douglass .....	24	Marion .....	40	16
DuPage .....	136	Massac .....	104	...
Edgar .....	144	Mason .....	96	8
Edwards .....	...	Menard .....	40	8
Effingham .....	96	Mercer .....	24	...
Fayette .....	16	Monroe .....	...	72
Ferd .....	104	Montgomery .....	48	205
Franklin .....	56	Moultrie .....	8	...
Fulton .....	8	Morgan .....	...	240
Gallatin .....	...	Ogle .....	184	...
Greene .....	24	Peoria .....	419	944
Hancock .....	88	Perry .....	...	...
Hardin .....	...	Piatt .....	48	...
Henry .....	72	Pike .....	56	88
Henderson .....	48	Pulaski .....	...	88
Iroquois .....	16	Randolph .....	...	...
Jackson .....	136	Richland .....	16	...
Jasper .....	...	Rock Island....	184	488
Jefferson- .....	...	St. Clair .....	...	...
Hamilton ....	96	Sangamon .....	101	696

Saline .....	88	160	Wayne .....	8	...
Scott .....	...	...	Washington ...	...	104
Shelby .....	16	24	White .....	...	96
Schuyler .....	...	56	Whiteside .....	248	232
Stark .....	...	8	Will-Grundy ...	266	16
Stephenson .....	320	328	Winnebago .....	102	80
Tazewell .....	120	...	Woodford .....	8	...
Union .....	40	96	Williamson ....	8	256
Vermillion .....	264	368			
Wabash .....	88	...	Total .....	14,578	32,076
Warren .....	56	...			

Exhibits .....	\$ 5,697.50	\$1,407.50
Subscriptions .....	108.00	79.00
Journal .....	12,000.00	8,500.00

Interest:		
Treasurer's Account.....	359.00	148.37
Savings .....		637.83
	\$32,742.50	\$42,848.70

The figures reported as May to December, when added to the receipts reported to the House of Delegates at the 1928 Annual Meeting covering the first four months of 1928, makes the total for the entire year.

Receipts from County Societies.....	\$56,561.00
Exhibits .....	8,745.00
Subscriptions .....	165.70
Journal .....	12,000.00
Interest .....	359.00

Total .....	\$77,830.70
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\$Exclusive of Journal advertising receipts, and interest first four months of 1928.

SECRETARIES RECEIPTS AND PAYMENTS, MAY 1, 1928-APRIL 30, 1929

RECEIPTS:

From County Societies.....	\$46,654.00
Exhibits .....	7,105.00
Journal subscriptions .....	187.00
Interest, bank accounts.....	1,145.20
Journal advertising, net.....	20,500.00

Total receipts .....	\$75,591.20	\$75,591.20
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Distributed as follows:

General Fund .....	\$30,228.21
Medico-legal .....	11,367.59
Legislative .....	7,566.40
Journal fund .....	26,429.00

		\$75,591.20
May 1, 1928, balance.....	65,342.33	65,342.33
		<hr/>
		\$140,933.53

PAYMENTS:

General Fund .....	\$28,143.26
Medico-legal .....	9,834.63
Legislative .....	2,910.86
Journal .....	24,215.08

Total .....	\$65,103.83
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Balance, May 1, 1929:

General fund .....	\$21,816.10
Medico-legal .....	26,540.97
Legislative .....	25,258.71
Journal .....	2,213.92

Total .....\$75,829.70

Members in good standing,

May 1, 1928..... 7,373

Dropped during year:

By Death ..... 118

Non-payment, Removals and Expulsions 396 514

514 6,859

Reinstated ..... 74 411

New members ..... 337

Membership, May 1, 1929.. 411 7,270

A considerable number of members have been suspended for non-payment of dues, and many of our component Society's Secretaries state that most of them will be reinstated during the year. An audit of the accounts of the Secretary, Treasurer, Editor, Educational and History Committees has been made, and certified as correct to May 1, 1929, thus covering the reports given above. The audit this year differs from those of previous years in that the audit is entirely to date, and not a year in arrears as has been the custom in the past.

During the past year, radical changes have been made in the accounting system of the Society, so that all accounts are kept in one book in the Secretary's possession. It is now possible to have a daily balance of all of the funds of the Society without writing the Treasurer, Editor or the depository banks. The cancelled vouchers are returned monthly, and a reconciliation made with the records in the Secretary's office. This permits a more complete financial report to the Council at each of its meetings, and to the House of Delegates. Every expenditure is properly recorded daily, carrying the balance in each of the funds of the Society. The report of the Secretary and the Treasurer before this House, for the first time correspond as to dates, receipts and expenditures.

Your Secretary is still convinced that a number of deaths of members are not reported promptly. Occasionally we are informed by the postal authorities of a death which occurred a year or more ago. The Component Society Secretaries have been nearly unanimous in their cooperation, and we want to take this opportunity to thank them collectively for their valuable assistance. During the past year, one Society has been reorganized through the efforts of Councilor Center. Another similar Society is now being reorganized. Through the assistance rendered by the Scientific Service Committees, it is possible for our smallest Societies to have good meetings.

The Society has recently lost by death one of its prominent members, a past president, and for many

years an untiring worker for the cause of Organized medicine, Dr. W. F. Grinstead of Cairo. For more than a half century he answered the calls of the distressed, and he was probably as well known throughout the state as any other member. Several other prominent members have also passed on during the past year, one of these being Dr. Adelsberger of Waterloo, for many years a loyal county society secretary.

In closing his report, your secretary wishes to state that in his opinion the per capita tax of \$8.00 per member should continue, as the Society is progressing satisfactorily, and for the amount of service given, has a lower annual tax than any other State Medical Society in the Country. Services rendered are directly in proportion to their cost, and through the wise guidance of our Council, the necessary expenditures have been kept to a minimum.

Respectfully submitted,

HAROLD M. CAMP, *Secretary*.

### CERTIFICATE OF AUDIT

This is to certify that I have made an audit of the following accounts of your Society for the year ended April 30, 1929.

DR. H. M. CAMP, *Secretary*.

DR. A. J. MARKLEY, *Treasurer*.

DR. C. J. WHALEN, *Editor*.

MISS JEAN McARTHUR, *Secretary*,  
*Educational Committee on Medical History*.

In my opinion the accounts showed the true financial transactions for the year and the accounts were correct. A detailed Audit Report will be furnished the Council.

Respectfully,

(Signed) FRED N. SETTERDAHL,  
*Public Accountant*.

May 6, 1929.

(It was moved that the report be adopted. Motion seconded and carried.)

Dr. Sloan: I move that the reports of the Committees, and Chairman of Committees, be read in abstract and that they be accepted as read, with such corrections or additions as may be necessary.

(Motion seconded and carried.)

The President: The next order of business will be the report of the Treasurer.

### REPORT OF THE TREASURER

RECEIPTS for year ending April 30, 1929:

From the Secretary.....	\$53,946.00
From the Editor.....	20,500.00
Interest on deposits.....	1,145.20

Total .....\$75,591.20

Balance on May 1, 1928..... 65,342.33

\$140,933.53

## PAYMENTS:

General Fund .....	\$28,143.26
Medico-Legal Fund .....	9,834.63
Legislative Fund .....	2,910.86
Journal Fund .....	24,215.08
Total .....	\$65,103.83
Balance, April 30, 1929.....	75,829.70
Total .....	\$140,933.53
Above balance is deposited at the State Bank and Trust Company, Evanston, Illinois.	
Checking account balance.....	\$43,707.75
Savings account balance.....	25,938.95
*Deposit in transit.....	6,183.00
Total .....	\$75,829.70
*Deposit in transit referred to was deposited May 3, 1929, and was April 30th remittance from Secretary.	

Respectfully submitted,

A. J. MARKLEY, *Treasurer.*

(It was moved that the report be adopted. Motion seconded and carried.)

The President: The next order of business will be the report of the Chairman of the Council.

## REPORT OF THE CHAIRMAN OF THE COUNCIL

The council has held six meetings since the adjournment of the House of Delegates. Bills due and presented have been paid.

An audit was had and the accounts of the several agents of the society were certified correct by the Fred N. Setterdahl Co., Public Accountants, of Rock Island.

With the help of Mr. Setterdahl, a system of accounting has been instituted in the office of the Secretary whereby a complete statement of the financial condition of the society may be struck at the close of business of any day; the single exception being a working fund remaining at the Editor's disposal for the handling of his advertising account. This fund can be included in the statement within a few moments, at any time; and the council feels that the additional work put upon the Secretary's office is fully compensated by advantages of the system.

The monies of the Society rest in three accredited repositories; the portion out of immediate call service bearing interest which accrues to the Society.

Of the Council's standing committees, the Educational Committee ranks first in point of expenditure and public interest. Its report, together with the report of its subsidiary Scientific Service Committee, is commended to the House. Its work has adhered to the five departments stated in our 1928 report and neither the Committee nor the Council has felt need for additional departments at this time. Both the Committee and the Council feel that treatment should never be discussed in public and that nothing good can ensue upon arguing with or about irregular practi-

tioners. The Council does not wish to follow American Medical Association agencies into these two errors for the reasons that treatment is an individual matter between a physician and his patient, and that irregulars exist only to such extent as the public wishes.

The Council regrets the physical incapacity of one of its members and wishes that the good health of Dr. D. B. Penniman might be restored. It congratulates the Society and Dr. Andy Hall upon the selection of one of our members for service as Director of the Department of Public Health of Illinois. The Council promises every cooperation or assistance possible in the work of the Department; and wishes that the work of Official Health Departments, of Volunteer Health Workers, and of private physicians might be more clearly defined for Illinois.

A representative of the Council appeared before a committee of the Federal Congress in opposition to a Bill which your House of Delegates has felt to run counter to the best interests of Illinois people and medical practitioners. The Bill (H. B. 14070, Newton) died in committee and the various patriotic organizations interested in its defeat share responsibility with the American Medical Association and the Illinois State Medical Society.

We regret to report having failed to continue the services of the Society's General Counsel, Mr. R. J. Folonie, whose resignation was tendered because of physical incapacity and increasing pressure of work. The Council feels grateful to Mr. Folonie both for his services of the past and for the co-operation which made it possible to secure the present services of Mr. Francis X. Busch as General Counsel.

Assistance has been given in the formation and work of the Ladies Auxiliary wherever demand has arisen. The Council, however, has endeavored to avoid forcing any such local organization which was not entirely spontaneous.

JOURNAL advertising rates have been increased 20 per cent by Council action, for the good of the JOURNAL. The JOURNAL still has no office other than through charity of the Editor. We are reminded that the feasibility of quartering that office of the Society with the office of the Educational Committee of the Council may presently become an acute question of economy and convenience for both.

Respectfully submitted,

WILLIAM D. CHAPMAN,  
*Chairman of the Council.*

The President: The next order of business will be the report of the Councilors.

## REPORTS OF COUNCILOR DISTRICTS

1. Dr. D. B. Penniman, Rockford, reported for the First District as follows:

The First Councilor District reports that the component Societies have had a good year. Some of the larger Societies have maintained weekly luncheon clubs in addition to the regular monthly meetings. These luncheon clubs have been of great profit. It is a psychological fact that when men break bread



together they become better friends, so when a company of cultured highly educated men such as are in our profession, get together, the result is always helpful. The enthusiasm of the younger members and the sustained interest of the old physicians has been very gratifying.

Our older men frequently do not realize how very essential to a good Society is their faithful attendance.

Death has taken from the first councilor district several very remarkable men, one over 92 years old, another over 82. These men were surgeons in the Civil War.

All of the men we have lost have been wheel horses in the respective Societies sacrificing time and strength to attend medical meetings; always alive to the opportunity of rendering helpful service to humanity and of being generous, noble, counselors to their professional colleagues. It can honestly be said of them that they are God's Own Noblemen.

Respectfully submitted,

DAVID B. PENNIMAN, *Councilor*.

2. *Dr. E. E. Perisho*, Streator, reported for the Second District, as follows:

The affairs of the Second Councilor District remain about the same as last year, with general harmony and good fellowship prevailing throughout the district.

The Second District consists of Whiteside, Lee Bureau, La Salle, Livingston, Woodford, Marshall and Putnam counties. They are well organized with at least 95 per cent of all the active physicians in the district belonging to County and State Societies, and all are very much interested in organized medicine.

All of our County Societies have held regular meetings and clinics with good attendance. Some of the more active societies have social activities such as dinners, picnics, golf, etc., in connection with their meetings. This has proven to be a great asset in promoting good fellowship and harmony among the members.

During the past year I have visited most all my county societies, and have endeavored to keep in personal contact with all the secretaries.

Several of the counties have availed themselves of the services of the Scientific Committee for their programs, as well as the services of the Lay Educational Committee for various Lay Public meetings.

I have attended all but one council meeting, and several adjoining county and district meetings.

I am glad to report there have been no mal-practice suits, or the expulsion of any member from the society for unethical conduct during the past year.

Respectfully submitted,

E. E. PERISHO, *Councilor*.

3. *Dr. S. J. McNeill*, Chicago, reported for the Third District, as follows:

All of the Medical Societies of the district have been quite active this year. The attendance at the meetings has been generally good. The Will-Grundy Society meets each Wednesday noon at the Chamber of Commerce, and after lunch, have a half-hour talk by some

physician on one of the interesting phases of practice, or perhaps some type of report of cases.

The Chicago Medical Society now has in excess of 4,200 members, and has been making a progressive gain. This Society is the largest local Medical Society in the World. During the past few weeks, several of the activities of the Chicago Medical Society have been broadcast throughout the entire country, and as is often the case, only one side of the controversy was given.

The Lake County Medical Society has 49 active members, the DuPage County Medical Society has 45 members, and the Kankakee County Medical Society has 44 members. All of these Societies are active and holding interesting meetings.

We believed that the Third Councilor District is not only well organized, but as a district is doing its part in upholding the traditions of organized medicine. During the past year, through the assistance of the Educational Committee, the physicians in the various senatorial districts of Chicago have been tabulated in such a way that it is a distinct aid to the Medical Legislation Committee work.

Respectfully submitted,

S. J. McNEILL, *Councilor*.

4. *Dr. William D. Chapman*, Silvis, reported for the Fourth District as follows:

The councilor for the fourth district has attended the meetings of the council and meetings of more than half the societies of the district. Opportunity for visiting with the remaining societies has been reduced by several circumstances among which infrequent meetings, failure to carry the councilor on the regular mailing list, and a seeming wanderlust on the part of the councilor, all bear a share. The councilor has accepted and filled five county society engagements outside the district and at distances in excess of one hundred and fifty miles, has given some days to the educational committee and has indulged a five-day junket for the council.

No situation within the district has changed very markedly during the year unless it be one instance of greatly improved attendance upon meetings, accompanied by increase of society morale. One society with a total membership of eight did entice one hundred and fifty doctors to a meeting; both the society and the guests are improved by the experience.

Several societies have drawn upon the resources of the scientific service committee, and with gratifying results.

Four counties of the twelve have functioning Auxiliary chapters.

The distribution of doctors is not recognized as an acute problem although there are sections which need better roads to permit of the best use of the present distribution. Attempts at dictation of some phases of practice by insurance companies is felt to be a disturbing influence between the professional and the business angles of practice.

The cost of medical care is being rather generally graduated to meet the approval of individuals and the public. The avaricious practitioner may be occasionally

met among our members but certainly is not met so frequently as is the practitioner who is too diffidently forgetful of self.

A tendency is noted which may presage a considerable change in the delivery of special treatment entailing hospitalization and which, if it continues to develop, is very different from the trend of ten years ago which carried patients to the larger cities or clinics for advice and treatment. I mean that an increasing number of the residents of large cities are coming to suburban or to their "old-home" towns for surgical or other treatment involving hospitalization. The past year has seen hard roads and automobiles utilized more than before as a means of evading the increased overhead of expensively located hospitals. In the fourth district costs of hospitalization are felt to be not exorbitant and the appointments rather satisfactory for practical purposes. It is to the credit of the profession that our practitioners seem inclined to meet this development with the spirit of professional aid transcending the thought of high-pressure business. Such a development would seem to be a natural consequence of the trend of the past decade.

Respectfully submitted,

WILLIAM D. CHAPMAN, *Councilor*.

5. *Dr. S. E. Munson*, Springfield, reported for the Fifth District, as follows:

For Year Ending May 1, 1929

Counties—Dewitt, Logan, Menard, Ford, Mason, Sangamon, Iroquois, McLean, Tazewell.

Instead of writing a report of each of the nine counties in the Fifth Councilor District, as has been our custom in former years, we are submitting the reports of the various counties, including remarks and synopsis of the year's work, as sent by their respective secretaries.

*DeWitt County*—Officers:

President: Dr. Chas. S. Bogardus, Clinton.

Vice-Pres.: Dr. J. E. Marvel, Waynesville.

Secretary: Dr. W. R. Marshall, Clinton.

Delegate to State Meeting: Dr. W. R. Marshall.

Membership: 17.

Gained during the year: 1. Lost: 0. Total Gain: 1.

Meetings held during the year: 10.

Average Attendance: 10.

Two programs out of three are given by the local men. There has been splendid interest and co-operation of all the members, both as to meetings and attendance, as well as attending meetings in adjoining counties, with co-operation when any requests have come from the legislative committee.

This report from the Secretary, Dr. W. R. Marshall, speaks well for the accomplishments of DeWitt County Medical Society for the past year. The one thing that is necessary for the progress of any county society is its attendance and scientific spirit. The steady growth of this society I attribute to this feeling of co-operation among its members.

*Ford County*—Officers:

President: Dr. J. S. Cunningham, Gibson City.

Vice-Pres.: Dr. S. M. McLaughlin, Paxton.

Secretary: Dr. Harry W. Trigger, Loda.

Delegate to State Meeting: Dr. Harry W. Trigger.

Membership: 10.

Gained during the year: 1. Lost: 2. Total loss: 1.

Meetings held during the year: 4.

Average attendance: 8.

This county is small, and having no large medical centers in the county, it is hard to get the men interested. Most of the men attend medical meetings in larger and more interesting places, such as Bloomington, Champaign, Kankakee, or Danville. In attending these meetings they come in contact with more men and therefore get more new ideas.

DR. HARRY W. TRIGGER, *Secretary*.

*Logan County*—Officers:

President: Dr. B. M. Barringer, Emden.

Vice-Pres.: Dr. N. A. Balding, Lincoln.

Secretary: Dr. E. C. Gaffney, Lincoln.

Delegate to State Meeting: Dr. L. T. Rhoads, Lincoln.

Membership: 17.

Gained during the year: 0. Lost: 5.

Meetings held during the year: 2.

Average attendance: 16.

Dr. E. C. GAFFNEY, *Secretary*.

*Iroquois County*—Officers:

President: Dr. W. H. Whitsitt, Danforth.

Vice-Pres.: Dr. L. A. Hedges, Crescent City.

Secretary: Dr. C. H. Dowsett, Watseka.

Delegate to State Meeting: Dr. C. H. Dowsett.

Membership: 19.

Gained during the year: 1. Lost: 1.

Meetings held during the year: 8.

Average attendance: 14.

The meetings have been full of interest, plenty of discussion, and the programs looked forward to with enthusiasm and preparation.

Dr. C. H. DOWSETT, *Secretary*.

*Mason County*—Officers:

President: Dr. C. W. Cargill, Mason City.

Secretary: Dr. W. R. Grant, Easton.

Delegate to State Meeting: Dr. H. O. Rogier, Mason City.

Membership: 11.

Gained during the year: 0. Lost: 1. Total loss: 1.

Meetings held during the year: 4.

Average attendance: 6.

The meetings were enthusiastic, although small in number. Campaign for small-pox vaccination was county wide, and for diphtheria was well advanced in the county.

Dr. W. R. GRANT, *Secretary*.

*McLean County*—Officers:

President: Dr. H. R. Watkins, Bloomington.

Vice-Pres.: Dr. J. H. Copenhaver, Bellflower.

Secretary: Dr. R. P. Pairs, Normal.

Delegate to State Meeting: Dr. E. P. Sloan, Bloomington.

Membership: 77.

Gained during the year: 7. Lost: 2. Total gain: 5.



Meetings held during the year: 10.

Average attendance: 30.

McLean County has had some excellent programs, the interest has been good, and the Society has never been more active than in the past year.

DR. R. P. PEAIRS, *Secretary*.

*Menard County—Officers:*

President: Dr. Irving Newcomer, Petersburg.

Secretary: Dr. R. E. Valentine, Tallula.

Delegate to State Meeting: (Not appointed).

Membership: 6.

Gained during the year: 0. Lost 0.

Meetings held during the year: 0.

As there are only six members, it has been difficult to hold any regular meetings during the year. There has been some talk for several years of affiliating with Sangamon County Medical Society at Springfield.

DR. R. E. VALENTINE, *Secretary*.

*Sangamon County—Officers:*

President: Dr. O. L. Zelle, Springfield.

Vice-Pres.: Dr. R. K. Campbell, Springfield.

Secretary: Dr. W. P. Armstrong, Jr., Springfield.

Delegates to State Meeting: Dr. C. S. Nelson, Dr. Herman Cole.

Membership: 121.

Gained during the year: 8. Lost: 4. Total Gain: 3.

Meetings held during the year: 13.

Average attendance: 42.

The report of Sangamon County Medical Society shows that it has been very active throughout the year, with an average attendance of forty-two. The programs have been interesting and attractive. The Society has again resumed its former custom of holding two meetings each month, alternating the programs with men from the local society. This has been very successful, and much credit is due to the efficiency and activity of the present officers.

At the May meeting the Society voted unanimously to extend an invitation to the State Society to hold the annual meeting for 1930 at Springfield.

DR. W. P. ARMSTRONG, *Secretary*.

*Tazewell County—Officers:*

President: Dr. C. F. Grimmer, Pekin.

Vice-Pres.: Dr. F. C. Gale, Pekin.

Secretary: Dr. Neal Crawford, Pekin.

Delegate to State Meeting: Dr. N. D. Crawford.

Membership: 18.

Gained during the year: 2. Lost: 2.

Meetings held during the year: 2.

Average attendance: 10.

No scientific programs were presented.

DR. N. D. CRAWFORD, *Secretary*.

Total membership of Fifth Councilor District: 296.

Gained during the year: 20. Lost: 18. Total gain: 2.

It should be definitely stressed by the secretary of a county society to members delinquent with their dues, that they are without the protection of the defense fund against malpractice suits, and also are liable to have their policies cancelled by any medical protective company in which they are insured, because most of

them require membership in the county society before issuing policies.

In two or three instances of county societies in the Fifth District where the membership is small, the question has been considered for many years of uniting with a county society with large membership. This is mentioned in the report of the secretaries of Ford and Menard County Societies.

There are several reasons why this has not been looked upon with favor, as a rule, by the State Society, as well as by the Councilor. Where a small society joins a large society and an epidemic or contagious disease becomes prevalent, it is more difficult to handle this situation, even through the State Department of Public Health, if there is no local medical organization. Where there is a functioning society these conditions are more readily met by the Doctors having the responsibility through their own county organization, and also in assisting the State Board of Health.

This applies to all other activities in the community of a small society: Co-operation with the school board, Parent-Teachers Association, Woman's Club, which are all factors in the health activities of the community, touching the question of health examination of the school child, pre-school child, child welfare, civic clubs, church organizations and all other community problems.

Some of these county societies that are small desire to unite with the largest society near them. This brings the problems for solution of a small town of a few thousand population, of the county organization, to a city of from thirty to one hundred thousand. It is not apparent how this assimilation of the small society will meet these conditions. The large society is in no way benefited from the small society uniting with it. The annual dues in a small society are usually much less than those of a large society, which appears to be an item with some of the members of the small society. A physician need not be a member of a large society to attend its meetings. If he will forward his name to the secretary of any society near him, it will be placed upon their mailing list and programs or invitations mailed him regularly without expense. In other words, the men of a small society can attend the meetings of the large society, as frequently as he wishes without any expense, in any way.

It is quite difficult for the secretary of a large city society to keep in touch with its members in another county in the collection of dues, and in seeing that all eligible physicians in the country are enrolled in their society. In complying with the by-laws and constitution of the Illinois State Medical Society, Chapter 10, Section 9, reads as follows: "The secretary of each component society shall keep a roster of its members, and a list of the non-affiliated registered physicians of the county in which shall be shown the full name, address, college and date of graduation, date of license to practice in this state, and such other information as may be deemed necessary. In keeping such roster the secretary shall note any changes in the per-



sonnel of the profession by death, or by removal to or from the county, and in making this annual report he shall account for every physician who has lived in the county during the year. Upon request he shall furnish this official report to the Secretary of the State Society and likewise to the Councilor of his district.

The program of the larger medical society is always open to the men from any small society for a paper or talk on any of the problems covering the conditions or observations in his community. The program of the various sections of the State Society welcome the papers that have been read before the small County Society.

There are probably some reasons for two weak or small societies joining together for mutual benefit, but there can seem to be no reason for a small society to join a large one, because, as stated, the small society can have all the benefits of the large society without any cost or obligations in any way, and are certainly always made welcome by any of the larger societies in the Fifth Councilor District.

S. E. MUNSON, *Councilor*.

6. *Dr. Chas. D. Center*, Quincy, reported for the Sixth District as follows:

To the Officers and Members of the Illinois State Medical Society:

The annual report from your Councilor of the Sixth Councilor District will contain nothing startling. This district embraces eleven counties, with a county society in each county. This is an increase of one, as Brown county had no medical society last year. This county has but nine doctors, and seven of them became members at the organization meeting. It is likely that nine of the nine would have joined at that time, but the roads were so impassable that two were unable to attend.

Your Councilor has been very pleased by the interest shown in the State and county medical affairs, and in medical organization, by the counties on his district. The apathy which apparently existed for a time toward the affairs of the State Society, its efforts and its policies, is, I believe, disappearing, and a healthy spirit of natural curiosity, and of a desire to join in co-operation is becoming more evident. As an illustration of this desire to work with the State Society I may cite the matter of furnishing data for the forthcoming volume of the Medical History of Illinois, for to date six, or possibly seven of these eleven counties, have taken the trouble and have done the work necessary to have their counties properly represented in this book.

During the past year there has been held one district conference with seven of the eleven counties represented by two or more members. Also during the year your Councilor has visited five of his eleven counties on invitation from these various societies.

Another development which has been noted with pleasure because of the feeling that it makes for growth, efficiency, and an increased co-operation, is the tendency of the county society, and of the Councilors, to be asked, and to go outside of their individual

districts to attend county meetings, not in an official capacity, but because of the desire on the part of the county society, and the willingness on the part of the Councilor, for a greater fraternalization.

Respectfully submitted,

CHAS. D. CENTER, *Councilor*.

7. *Dr. I. H. Neece*, Decatur, reported for the Seventh District as follows:

After a careful survey, I find that conditions in the Seventh Councilor District grade from complacent indifference to marked enthusiasm. Clinton, Effingham, Christian, Montgomery and Macon Counties report an active year in regard to regular meetings, good attendance and active interest.

In one or two instances there seems to be some indifference, lack of enthusiasm, and even apathy existing.

Your Councilor during the past year, has tried to emphasize the opportunity that the Scientific Service Committee offers to our smaller Societies in furnishing programs, and the assistance the Educational Committee generally is giving for the asking.

The reaction in a number of cases is that they would feel the embarrassment of having a speaker from Chicago, or elsewhere, and have only a few members present at the meeting. Where the interest has been at a very low ebb not a few men have dropped their membership by non-payment of dues.

Respectfully submitted,

I. H. NEECE, *Councilor*.

8. *Dr. Cleaves Bennett*, Champaign, reported for the Eighth District as follows:

The affairs of the Eighth Council district have been quite satisfactory during the past year. A Councilor District Meeting was held at Mattoon on October 25, 1928, with sixty-five present from the various counties of the District. Dr. Camp made an excellent address on "The Importance and Necessity of Medical Organizations." Dr. Carl Hedblom of the University of Illinois, Department of Surgery, gave an exceedingly practical and instructive talk on "The Acute Abdomen." Both of these talks were well received and were discussed by Drs. Dudley, Dallenbach, Buckmaster and others.

The State Parent-Teachers Association met in Mattoon April 17, 18 and 19, 1929. Your Councilor was asked to be present and he was very cordially received. The position of the Illinois State Medical Society toward the pre-school child examinations seemed to be entirely satisfactory to the Parent-Teachers Association.

Respectfully submitted,

CLEAVES BENNETT, *Councilor*.

9. *Dr. Andy Hall*, Mt. Vernon, reported for the Ninth District, as follows:

The Ninth District is composed of fourteen counties in the Southeastern portion of the State. There are eleven active societies in this District.

Two counties, Jefferson and Hamilton, have combined into one Society. Recently Pope County, which has only a few physicians, organized, but so far as I can learn, has functioned but little. Hardin County

has only four or five physicians, has no organization, but some of the physicians have joined Gallatin on the East and some have joined Saline County on the North. I have suggested that Hardin County and Pope unite into one organization, as they are connected by a hard road they could have a common place of meeting and could develop an active, useful society. Jefferson-Hamilton County Society, Franklin, Williamson and Saline have good organizations, meeting frequently, and have good programs and good attendance. Wabash, White, Gallatin, Massac, Wayne and Johnson Counties have good meetings three or four times per year. Edwards County has an organization which meets occasionally. However, the few physicians in this county frequently attend meetings in adjoining counties.

Taken as a whole, the physicians in the Ninth District are regular, ethical, well qualified and will compare very favorably with physicians in other districts. Comparatively speaking, we have but few chiropractors, osteopaths or Christian Scientists in this district. Our people may be too old fashioned to fall for them.

ANDY HALL, *Councilor*.

10. *Dr. J. S. Templeton*, Pinckneyville, reported for the Tenth District, as follows:

Pinckneyville, Ill., April 25, 1929.

The past year has been a successful one for medical organization in this district. More members have been attending the meetings than ever before. Hard roads are a great benefit to those who care to take advantage of County meetings to better fit themselves for service to their constituents. Not only can we who live in Counties that have but a small membership have more meetings of our own, but we can attend those of near-by Counties. I am pleased to report that all of our Southern Illinois County Secretaries are, when they have something good to offer, inviting those of us in nearby towns and cities. It is no task for us now to drive forty or fifty miles to hear a good lecture.

It grieves me to report that we have lost some of our best men. To my knowledge, Alexander County has lost one, Dr. Grimstead, of Cairo. A former President of this Society died recently. In his death Alexander County, the Tenth Councilor District, Southern Illinois, and our State Society lost one of their most able and faithful members. The Grim Reaper struck from the roll of the Union County Society the names of Dr. Sidney Condon Martin and Dr. Andrew Jackson Lyrly; both active members. Jackson County lost Dr. Ernest N. Neber of Carbondale, a man in the prime of life, having practiced but about twenty years. During the influenza epidemic he faithfully met the demands of those in need and paid the price himself with his life.

Washington County lost one, the only practitioner of Venedy, Ill.—Dr. A. C. Klosterman, who will be greatly missed by his community.

Monroe County loses one. Dr. Louis Adelsberger of Waterloo, who was at one time President of the

Illinois State Board of Health and also was well and favorably known in Southern Illinois.

St. Clair County lost four: Dr. E. J. Hodah of O'Fallon, Dr. J. S. Foulon of East St. Louis, Dr. G. Diesel of Millstadt, and Dr. E. H. Bottom of East St. Louis—all men of creditable records in the Professional work.

So far as I could ascertain, Jackson County was the only one in the Tenth District that held meetings every month during the year. Nine papers were presented by the local membership and seven by visiting physicians. Their banner meeting was a testimonial dinner held March 28, 1929, in the Presbyterian Church at Murphysboro in honor of fifty years of service by Doctors H. C. Mitchell of Carbondale and Chas. D. Gardner of Grand Tower. Both men were able to be present and all were delighted to honor them. Plates were set for one hundred and fifteen guests.

St. Clair County had ten meetings and its Belleville Branch had nine during the year. Illinois men supplied seven programs for the County meetings. Three were from other states. Two of the Belleville meetings were provided with programs by home talent.

Perry County held four meetings during the year, more than half the attendance was from other counties. Two were supplied by Illinois talent and two programs from men of another state.

Union County held eleven good meetings. Six programs were furnished by local talent, four by foreign and one by foreign and local.

Alexander County had some good meetings but I cannot say just how successful its society has been the past year.

All Counties in the Tenth District are organized and we hope it will only be a short time until all are well covered by hard surfaced roads and can have at least ten meetings a year.

J. S. TEMPLETON, *Councilor*.

The President: The next order of business will be the appointment of the Resolutions Committee. I shall appoint for this committee—Dr. E. P. Sloan, Bloomington; Dr. R. L. Green, Peoria; and Dr. E. H. Weld, Rockford.

I shall now ask the First Vice President, Dr. J. P. Simonds, to take the Chair.

The Chair: The next order of business will be the reports of the committees. I was asked by the laboratory men of the City of Chicago to say to the members of the Illinois State Medical Society that the men who are engaged in the so-called Scientific Medicine, and in the teaching of medicine, are very appreciative of the very beautiful and diplomatic way in which Dr. Neal dealt with the vivisection bill, which affects those men more than it does the general practitioner.



I will now call upon Dr. Neal to present the report of the Legislative Committee.

#### REPORT OF THE LEGISLATIVE COMMITTEE

From a legislative standpoint the society has had many problems to contend with during the past year. In accordance with our adopted custom, a lengthy letter outlining the legislative policy of the Illinois State Medical Society was mailed to each candidate for the General Assembly, immediately after the primaries, an additional letter being sent to each elected member prior to the convening of the session in January. While these letters did not ask for a specific pledge or reply, it is indeed gratifying to note the number of statements from the members of the General Assembly agreeing to be guided by our society in all matters pertaining to the public health.

Although the session will be somewhat shorter than former years, the usual great number of bills will have been offered prior to adjournment, and up to date 1,200 of these measures have been introduced in the legislature. The Legislative Committee has carefully watched each and everyone of them to ascertain their connection, if any, with the medical profession. The usual number of cult bills were introduced. Two years ago the Chicago Medical Society with the aid of our very efficient secretary of the Educational Committee, made a complete roster of the members of the Chicago Society according to senatorial districts. This was indeed quite a task, but it enables our Legislative Committee to practically surround a Representative or Senator in any given senatorial district in Chicago by members of the profession armed with all available information regarding legislation. It has indeed worked most happily this year.

Early in the Session an individual letter was sent to all members of the Chicago Society, totaling over 4,000, asking their aid if called upon to defeat pernicious legislation. Over 500 responses were received, increasing our mailing list to almost 1,500, however, the committee received much better cooperation when writing direct to the key-men in each of the districts, when an emergency was pending. Literally thousands of letters have been sent throughout the state giving specific information and the results have been excellent.

The Naparaths, backed by a very able attorney and a large lobby of their proponents, met a most stinging defeat in the Judiciary Committee of the House, by a vote of 20 to 0. More than half the members of the Committee present were from Cook County, which proves conclusively that the members of the Chicago Medical Society had done their work most efficiently. The Chiropractors, in another committee, composed mostly of down-state members, had their bill, also presented by an outstanding attorney, defeated by a vote of 10 to 1. There are very few bills pending that are engaging our attention at the present time. Your committee believes that the Sanatology Bill will have been defeated before this report is printed. A

pernicious Optometry Bill is slated for an early discard.

The Anti-vivisectionists have concluded that their measure will be defeated. They probably are the best organized of all the groups which we had to antagonize this year. The Anti-vivisectionists are amply supplied with funds to carry on a most persistent campaign two years hence. This year they engaged Mr. George Arliss, the prominent English actor, who recently held a meeting reception in Springfield which was attended by over 700. The hearing in the City Council Chambers of Chicago was attended by about 800 and the Vivisectionists are making a most desperate effort to curtail animal experimentation in the State of Illinois.

The opposition has been maintained by not only the Illinois State Medical Society but the medical colleges and other scientific groups in the State of Illinois.

Several very pernicious Narcotic Regulations were advocated and subsequently withdrawn as the result of our protest. Another innocent looking, yet a most unfortunate bill if passed, designed to curtail chicken thieving in the southern part of the state, would place an unnecessary and unwarranted burden on the physician, in that it would hold a physician criminally responsible if he failed to report the treatment of a patient who had suffered with a gunshot wound but, it did not include everyone else having knowledge of the shooting.

A larger group of less important bills have been corrected rendering them innocent in so far as the medical men are concerned; for instance, the Barber Bill was rewritten, and all of the medical provisions were deleted. Corrective suggestions in several other bills were accepted by the proponents. It is a well known fact that bills introduced, having no opposition, stand a very good chance to become laws, which calls for careful and constant watching on our part.

The duties of the Legislative Committee, as outlined by the Council several years ago are:

1. To organize the medical profession for legislative activity, for the better protection of the public health.
2. To instruct the members chosen on the various local committees in all legislative matters of interest to the society.
3. To educate the legislators regarding matters concerning the public health and the necessary protection of the people of the state in this most important subject.

As each councilor has a certain number of counties or districts under his jurisdiction it is a comparatively easy matter for him to select a legislative committee of local physicians in his district.

The method we follow in any given councilor district is as follows: Immediately after the election of a member of the legislature the councilor selects a committee of physicians who are willing workers and who, if possible, reside in the same city with the elected member, one of whom is always his family physician. Frequently this group is augmented as the situation demands in any particular district.

Through the aid of the councilor a questionnaire is completed by several members of the committee

relative to the particular legislator in that district. This questionnaire asks for the name, address, senatorial district, occupation, politics, name of political advisor, name of family physician, attitude toward medical profession, previous legislative record, etc.

These reports are sent to the chairman of the state legislative committee who carefully checks and correlates this information; conflicting reports are reconciled and any missing information sought. Occasionally, but not often, do we have to change the personnel of the local committee, if there is laxness in cooperating, and resort to more willing workers.

This briefly explains our first problem—that of organization.

Secondly, the schooling of the various local groups is assumed by the state legislative committee, and an intimate contact is maintained throughout the session of the legislature. A frequent digest of all bills of interest is sent to each local committeeman so that he may be properly informed and can talk intelligently with his representative or senator on all medical bills.

Inasmuch as each member of the general assembly is elected in his respective district, it is from the voters of his district that he looks for advice and guidance.

The chairman of the state committee resides in Springfield and maintains an acquaintance with all the leading members of the general assembly, but does not attempt to influence them directly. If he finds their attitude contrary to ours he relays this information to the local committee, frequently making suggestions as to what method would be most acceptable in convincing the law-maker that his decision should be altered.

Legislators are politicians and seek popular favor and are ever ready to listen to advice from their own voting districts. In a number of instances when the physicians have been unable to convince the lawmaker we have used a committee of dentists, druggists and lawyers to intervene in our behalf, and also frequently resort to his banker and religious advisor for a like service, because the medical profession does not seek to alter his opinion unless our request is predicated on the protection of the public health.

The local committeemen are given full credit for the voting attitude of the legislator and assume the responsibility with a fine spirit of cooperation.

We have no large medical lobbies of physicians and in this matter save an immense amount of time and expense to the profession. The work can be and is done more effectively in the home districts.

Many legislators honestly believe there is a professional jealousy held by the medical men against the cults, and this propaganda is instilled into them by the cultists in a most efficient manner, and anything a physician says to this type of legislator derogatory to the drugless healer tends to strengthen this belief and many votes are cast against us through this error. This thought brings up an interesting angle of our work in schooling the physician and that is, "What not to do." To illustrate: In the recent Illinois Assembly a prominent physician was asked to write to the three

legislators in his district opposing a certain bill creating a drugless healer's board, the letter commenced as follows:

"When the tornado in 1925 devastated southern Illinois there was an appeal for physicians, but no invitation was extended to the pseudoscientific charlatan, the second story grafter or the bungling ignoramus known as the chiropractor."

This is wrong, all wrong, and enhances the belief that our legislative opposition to such cult measures is based on jealous fear.

Many osteopaths, chiropractors, naprapaths, etc., are law abiding citizens, property owners, and church members and such unkind inuendos are unnecessary, and devoid of proof. If we cannot show the fallacy of their claim for special privilege legislation without delving into personalities we are necessarily making our task most difficult.

Group meetings are frequently arranged by the councilor, and one of the members of the state legislative committee is invited and a full discussion is had of any pending legislative problem needing attention in that particular district.

The ILLINOIS MEDICAL JOURNAL, as well as the Bulletin of the Chicago Medical Society have always cooperated by publishing any material suggested by the legislative committee, besides the many fine and original articles and editorials, which not only instruct the individual local committeeman, but also keep the entire membership informed as to the legislative situation.

The Educational Committee through its wonderful work here in Illinois has been most beneficial in arousing helpful interest throughout the state in all matters pertaining to medical legislation.

Having our organization completed and instructed prior to the convening of the legislature we are ready for the more important work—that of instructing the law-maker so that he may vote intelligently on the many important medical bills which will be considered during the session.

The last Illinois legislature was composed of 153 members in the house and 51 in the senate. A summary shows these members by occupation as follows:

#### HOUSE OF REPRESENTATIVES

Lawyers .....	40	Wholesale Beverages.....	2
Farmers .....	16	Business Education.....	1
Real Estate .....	14	Cigar Manufacturer.....	1
Insurance .....	9	Coal and Ice.....	1
Home Makers.....	5	Dentist .....	1
Real Estate and Insurance	5	Engineer .....	1
Bankers .....	4	Farmer and Auto Dealer...	1
Contractors .....	4	Farmer and Insurance....	1
Clerks .....	3	Farmer and Seedsman....	1
Manufacturers .....	3	Flooring Manufacturing...	1
Merchants .....	3	General Supt. and Manager..	1
Publishers .....	3	Commissioners of Lincoln	
Retired .....	3	Park .....	1
Salesmen .....	3	Grain Merchant.....	1
Farmer and Banker.....	2	Hotel Manager.....	1
Secretaries .....	2	Hotel Proprietor.....	1
Linotype Operator.....	1	Oil Business .....	1
Master Decorator.....	1	Paving Inspector.....	1
Merchant and Farmer....	1	Personal Bailiff.....	1
Merchant and Musician...	1	Physician and Farmer....	1



Miner .....	1	Physician and Surgeon....	1
Publisher and Lawyer.....	1	Plumbing and Heating....	1
Sand Dealer.....	1	Printer .....	1
School Teacher and Pub-	1	Public Accountant.....	1
lisher .....	1	Undertaker .....	1
Teaming .....	1		

## SENATORS

Lawyers .....	19	Housewife .....	1
Farmers .....	7	Insurance .....	1
Merchants .....	4	Insurance and Real Estate	1
Bankers .....	3	Mining and Milling.....	1
Clerks .....	2	Physicians .....	2
Manufacturers .....	2	Publisher .....	1
Builder .....	1	Real Estate, Insurance and	
Contacto .....	1	Writing .....	1
Druggist .....	1	Salesman .....	1
Editor and Publisher.....	1	Teacher .....	1
Florist .....	1		

To rightly inform such a group on the proper standards to protect the public health is not all too easy, although possible, as has been shown by the result of the society's work in the legislature.

Many members serving their first term become confused at the great number of bills touching on every known subject and naturally cannot analyze and decide what is best for the people at large unless those interested in any particular proposal make an effort to put the facts before them in a fair and honest manner. It is therefore, necessary to canvass this situation carefully and inasmuch as the members of the general assembly, as shown by the above summary, are business and professional men from every walk of life, intelligent information is sought by them; and all too frequently, due to the laxness of those interested, do these law-makers err in the proper understanding of some of the many bills that are presented.

A member of the Legislative Committee always appears before the house or senate committee to voice protest or approve all measures pending which are of interest to physicians, but he refrains from abuse or personalities, aiming fairly to put our opinion in the lawmaker's mind, but obviously we are only reaching the members of that particular committee, therefore, a digest of the bill pending is drawn up in a letter form and sent to each member of the house or senate if the bill is lost by us in committee so that all members may know our point of view.

We are very glad to report that no legislation inimical to the best interests of the physicians and the public health, has been passed by the Illinois General Assembly, in over 15 years, which rather demonstrates that our plan, at least, is a workable one and productive of good results.

In accordance with the usual custom, a member of your legislative committee calls on each newly elected Governor to acquaint him with the aims and ideals of the ethical medical profession, and in return, to get his opinion regarding legislation which may effect the public health. Governor Emmerson has indeed been kind to your committee, and allowed them a number of conferences, and it is gratifying to know that he is for every good law to protect the people's health, and in his public life he has always respected the wishes of the ethical medical profession. The Illinois

State Medical Society is to be congratulated upon having a Governor who is very anxious to make Illinois one of the outstanding states, in reference to the Department of Public Health. He appointed as the director of that important department, Dr. Andy Hall, a councilor of our society, who had the endorsement of a large group of our members. With such men as Governor Emmerson and Dr. Hall, the people of the state have little to fear but that the best interests of the public will be served.

In closing, your legislative committee again wishes to acknowledge the support given it by the officers and individual members of the council, the Editor of the ILLINOIS MEDICAL JOURNAL, the *Bulletin of the Chicago Medical Society*, the Educational Committee, and the many officers and secretaries of the County Societies throughout the state, and especially are we indebted to the personal work of the several thousands of physicians in the state, who by their efforts in interviewing and informing their home representatives or senators to the General Assembly, have been directly responsible for the good results obtained by the Illinois State Medical Society in its legislative work since our last report.

Signed,

C. E. HUMISTON, M. D.,

EDWARD BOWE, M. D.,

J. R. NEAL, M. D.,

*Legislative Committee.*

Dr. John R. Neal, Springfield: In the report it is stated, "there are few bills pending that are engaging our attention at the present time. Your committee believes that the Sanatology Bill will have been defeated before this report is printed. A pernicious Optometry Bill is slated for an early discard."

Subsequent to the printing of the report the Sanatology Bill was killed in the House. It needed seventy-seven votes to pass, but received only thirty. Fully twenty-five of these were given as a favor to the old fellow who had proposed the bill.

A pernicious Optometry Bill was defeated in the Judiciary Committee of the House by the outstanding vote of eighteen to three. It is very seldom that one sees such a universal desire to kill a measure in such a demonstrative fashion.

There have been thirteen hundred fifty bills introduced and your Legislative Committee has made an effort to read and observe each of them very carefully. Out of that number we found one hundred thirty-two either specifically or indirectly affecting the medical profession. Out of that number there were forty-two that were absolutely obnoxious and unnecessary. Some of them were very silly bills, but if they did pass

they would in many ways affect you. For instance, there was a bill introduced in which it made it punishable by fine or imprisonment, or both, if a physician treated a gunshot wound and did not report it to the police. That looks innocent enough. It was proposed with the idea of preventing certain crimes. It made the physician only responsible by fine or imprisonment; it did not make the fellow who fired the bullet responsible, or the fellow who was shot responsible, or any of the bystanders, but it made it obligatory on the part of the physician who treated the man to prevent infection responsible for the reporting of the case. It was pointed out that if a boy would accidentally shoot his mother at home, the family physician would have to make a police record of it. I found out that the bill was introduced by a group who believed the measure would prevent chicken stealing in the southern part of the State.

I would like to take this opportunity to thank the President, the officers and the members in Chicago for their cooperation in some of our most difficult tasks. We, downstate, know our representatives and senators because we live close to them. It is much different in Chicago where many thousands of people live in each senatorial district. It is no wonder it is difficult to see these men or to get their names.

The Editor has been very kind in giving us many columns in the Journal, as has also the Chicago Medical Bulletin. We certainly want to thank the Educational Committee for its work. I like to compliment the officers of our Society, but the greatest thanks is due to those fifteen hundred individual doctors who received personal appeals from the legislative committee, and responded. In that way we built up an organization that has so far been successful.

Thank you very much.

The Chair: We will now have the report of the Public Policy Committee.

#### REPORT OF THE PUBLIC POLICY COMMITTEE

May 4, 1929.

Members, House of Delegates:

Two meetings of the Public Policy Committee have been held, at which were present Doctor H. J. Way and myself.

The Committee took into consideration that each year a report to the House of Delegates has been made that consisted of mention of various activities of

individual members that were in the interest of the medical profession and the public. A number of these activities was responding to requests by the Educational Committee of the State Society to deliver addresses before lay audiences. The other parts of the reports dealt with suggestions that the Committee thought, if carried out by the medical profession, would be of worthwhile value to the medical profession and the public.

In the years of its existence neither the Council of the State Society, nor any of its committees, have referred anything to the Public Policy Committee for consideration. The Committee is of the opinion that this omission has been a distinct loss to the Society because there are many things other than legislative problems that from year to year should be studied and the results of such studies reported to the state organization. In this case you have had a Committee that was willing to work, but from some unfortunate oversight, it has never in the years of its existence been given anything to do, nor received official notice of the meetings of the Council of the State Medical Society.

The Committee is of the opinion that the Public Policy Committee of the State Society is an important Committee, to which can, and should, be referred many things, the deliberate consideration of which will result in mutual benefit to the medical profession and the public.

\*The discouraging task of submitting annual reports has been continued with the hope that the faithful workers for the State Society will awaken to the fact that committees that are willing to work are few in number and should be supplied with problems.

Respectfully submitted,

(Signed) EMMET KEATING, *M. D., Chairman.*

GEORGE MICHELL, *M. D.*

H. J. WAY, *M. D.*

The Chair: We will now have the report of the Medico-Legal Committee.

#### REPORT OF MEDICO-LEGAL COMMITTEE

During the past year your committee has had some very serious cases to defend and it has had the whole hearted cooperation of the profession. The expense has been largely that in two cases, one of those, our most dangerous case was won in Court.

We have had a less number of cases than usual come to trial, two or three of these where the liability was recognized, were settled without expense to the physician. The committee does not favor the settling of cases of doubtful liability, because of the effect it may have on the possibility of increasing the number of malpractice suits.

Your committee has endeavored to suppress unpleasant newspaper notoriety in publishing notice of these suits which usually claim excessive sums for damages. It has been explained to the newspapers in Chicago and downstate, where we could make contacts, that only about 5 per cent of these threatened suits



were brought to trial and in only 2 per cent of those brought to trial were there judgments or settlements made, and that the injustice done the Doctor who is usually the victim of false accusation did not offset any good effect that the plaintiff received through this publicity.

It was promised, however, to give this information in case a judgment was secured.

There has been only one case published in Chicago for several months and in this case a newspaper man brought the suit.

The suits that come up now are mostly confined to unusual cases where there have been no precedents set, such as aphonia following tonsillectomy, skin sloughs following injections in treatment of varicose veins and two for improper circumcision.

The courts have been kind to us with fracture cases, recognizing that a perfect functional result does occur without absolute coaptation of bones. On the other hand, no physician should take any chance, and should always use the X-ray in fractures.

The sponge cases are our serious ones, the Courts in some states holding that the mere finding of a sponge is evidence of the Surgeon's negligence. There has been no definite ruling in Illinois, although we do fear the results.

If we could be sure that there would be no careless word dropped by the second or third consultant, at least no word that would be used in open Court, and if the sponges used in operations could be provided with a larger anchor, your Medico-legal Committee would be able to give a better report next year.

Mr. Robert J. Folonie, our counselor for many years, on account of ill health and heavy business duties, resigned January 1st. He was our faithful attorney for 14 years and the Society owes him much for what he has done for us.

He has been succeeded by Mr. Francis X. Busch, Ex-Corporation Counsel of Chicago, a highly eminent lawyer, and your interests will be safely looked after by him.

Respectfully submitted,

J. R. BALLINGER, *Chairman,*  
Medico-Legal Committee.

The Chair: We will now have the report of the Educational Committee.

#### REPORT OF THE EDUCATIONAL COMMITTEE

It is with a certain degree of satisfaction that your Educational Committee submits to the House of Delegates a report of its work for the past twelve months.

There has been a growing interest on the part of the public in the matter of health and healing. This interest is evidenced in the great amount of advertising promoting various products in their relation to health. One needs only to scan the advertising sections of newspapers and magazines and the show cards in public vehicles to be convinced that the word "health" is being used today more than any other one

word. How is the public to determine what portion of this health propaganda is good or bad? That information can best be secured through sources such as state medical associations and their component societies.

The Illinois State Medical Society in establishing an educational program for the state must have had in mind that, "It is just as much a deception of the public to have something good for them and not tell them as it is to have something bad and tell them it is good."

The public wants information. They are more frequently coming to the medical society for that help. You may judge for yourselves by the number of questions referred to your Educational Committee in one day. "Can you tell me the name of a good dentist?"—referred to the Chicago Dental Society. "I live on the south side and wish to know of some woman physician"—referred to the Chicago Medical Society. "Our Parent Teacher Association wishes a speaker to talk on 'Understanding the Adolescent,' can you help us?" "Please send me material you may have suitable for the public on 'malaria.'" "I have been asked to make a health talk. Can you send me some material?" "Have you a copy of Senate Bill 231?" "Please send a speaker to address our Junior Auxiliary." "Please make me a copy of this list of Illinois physicians who served in the World War." "We wish literature and moving picture films for use during Negro Health Week."

Your Committee is glad to report that all requests have been taken care of in a satisfactory manner. There is a wealth of material which can be secured through the office of the Committee on almost any health subject. Physicians have learned that they may expect quick response to their requests. During the year the Committee has assisted in organizing material for physicians on such subjects as Tropical Diseases, Eradication of Rats, Safe Water Supplies, Medical Economics, State Medicine, Number of Physicians and Hospitals in Rural Communities of Illinois, Medicine and Religion.

We might therefore report that the office of the Education Committee has served as a clearing house to members of the Illinois State Medical Society.

An important part of its work has been the cooperation given certain lay groups of the state. Your Committee has been represented at the organization meetings of the Elks Foundation for Crippled Children and satisfactory plans have been set up for crippled children's clinics. The Foundation has definitely stated that these clinics will be held only in counties where the medical society wishes and that no patients will be admitted to these clinics unless accompanied by the family physician or with his consent.

The Chicago Woman's Club has been especially interested in promoting an educational campaign concerning cancer. The Committee has been represented at the conferences of the Club and when a definite educational program is launched, the Educational Com-

mittee will take an active part in promoting intelligent information about cancer.

The Committee has been represented on the Advisory Council of the Child Hygiene Division of the State Department of Health. The Council has approved a plan for work in several counties of the state which will require the cooperation of the Medical Society, Dental Society, and certain lay groups. Such a plan of procedure should make for a much better understanding, on the part of community groups, relative to certain health problems which may be studied.

The Educational Committee operated with Chicago Woman's Aid in conducting a series of sex hygiene lectures before the girls of the Juvenile Detention Home. Cooperation was also given the officers of the Jewish People's Institute in scheduling speakers for groups of mothers and in securing films and health plays for many schools.

The Illinois Congress of Parents and Teachers are suggesting to their local Associations that pre-school children be taken to the family physician for examination and correction of defects. This plan shows a willingness on the part of the Congress to cooperate with the medical profession of Illinois and the Committee hopes that local medical societies will reciprocate. Many speakers have appeared before Associations of the state and mothers as well as speakers have been enthusiastic over these educational health talks.

The American Public Health Association invited the Educational Committee to exhibit at their annual meeting last Fall. This exhibit seemed to attract considerable interest and many physicians spoke of the fact that Illinois "was on the right track." Mimeographed copies of an article on the value of the periodic health examination were given out to those who stopped at the booth. In addition to this exhibit the Committee secured physicians and nurses to assist in the adult examinations.

The Committee has worked with the Illinois Federation of Women's Clubs and also with the Illinois Dental Society. District meetings of the Federation have been addressed by members of the Committee and other speakers from the Society. The Committee cooperated in plans for the observance of Health Week and particularly May Day. Speakers were scheduled, moving picture films secured, and appropriate news items released to all papers of Illinois.

The Home Bureau organization of Illinois has been given more or less assistance. In one county, health talks were given by physicians before all of the home units. The Home Advisor wrote, "Reports on talks by the doctors are that they gave the women material which will be most valuable to them. I think the plan a splendid one and hope that you will feel that results will justify the use of a similar plan in other counties."

The state chairman of the 4-H clubs, which are a part of the Home Bureau organization, recommended that the girls of these clubs who were entering health contests should have their physical examinations made

by the family physician. We have no report as to the number of girls who were examined last year under this new method. The number, however, will no doubt be increased this summer.

The Committee cooperated with the Kiwanis Clubs in promoting Boys' Week.

Some assistance has been given the Women's Auxiliary. Speakers have been scheduled, material has been set out and legislative problems particularly affecting the public and the medical profession have been presented to the branch auxiliaries by members of the Committee.

The Committee assisted in compiling a list of the Chicago Medical Society members classified according to Senatorial districts for the Legislative Committee.

In order to reach many groups of people health education has been promoted through various channels. The health column prepared by the Committee and released to newspapers for use over the signature of the local medical society has had a definite place in this educational program. There has always been some question as to whether or not a press service would be worth while and satisfactory to the medical profession and the public. In order to get some idea as to the answer of this question, a letter was sent out to 81 editors and a number of physicians. These replies indicated that the service is needed and that the public is interested. Editors wrote, "Service could not be improved upon in my opinion. Articles are clear, well written and cover the subject nicely. We feature the service with box head and young and old read it every week." "Matter is O. K. in every respect. We like it and use it regularly." "We will state that the material has been very satisfactory and we have no criticisms to offer." "Only a few times have the articles seemed to be propaganda in behalf of the medical profession. We appreciate your service and hope that it will be continued."

Physicians reported: "The articles have been entirely satisfactory both to the members of the profession and to the editors." "Material is O. K., appreciated and used regularly. No suggestions." "If we were to offer any criticisms it would be that an improvement would be made by making the articles a little more brief. People would read them more and editors would take them more readily, if they were slightly shorter. The articles are excellent from an educational and literary standpoint." "Those I have observed seem timely and good." "Your articles have been excellent and I make it a point to read them over in case that I may be prepared for any questions that might be asked."

Special publicity has been given by the Committee to some of the more important meetings called by county medical societies. These news items give the public an opportunity to know that county medical societies are functioning. Many physicians feel that announcements appearing in local papers have been of appreciable value in stimulating interest and better attendance at these meetings.

Educational articles have been sent into communities where epidemics have occurred. Articles were released



to all newspapers in the state during the influenza epidemic in December. Special articles were prepared on health topics emphasized for observance during Health Week. All newspapers received these articles for publication over the signature of the Illinois State Medical Society.

One hundred and ninety new educational articles were written and approved by the Committee.

Ten thousand two hundred and seventy-five press articles were released to Illinois newspapers. Many more newspapers would be willing to carry a series of health education articles over the signature of the local county medical society, if physicians would take the responsibility of securing the interest of the editors. This health column furnished by the Educational Committee is better than some and as good as many columns for which editors are paying a high price.

The radio, which today represents one of the greatest advertising mediums, has also been used by the Educational Committee. Health talks have been given by members of the profession over stations WGN, WLS, WJJD and WHT. At the present time WGN and WJJD are being used every week. The Committee approves all material which is broadcast. Daily talks were given during the influenza epidemic.

Eighty-nine talks were given during the past twelve months.

A woman in the western part of the state reported by letter that she listened in every week and was particularly interested in the talks given on child care. She requested the Committee to help her outline health programs for twelve Parent Teacher Associations in her community.

The physicians of the state have given such splendid cooperation that the Educational Committee has been able to take care of 567 requests for health talks. These talks are popular and the Committee feels that the majority of appointments made for members of the Speakers' Bureau have been met satisfactorily. An effort has been made to secure definite reports on all of these talks. A number have been excellent, and the majority were good. Following a health talk given by a member of our Speakers' Bureau, seven requests came from other lay organizations in that same community for speakers from the Illinois State Medical Society.

Thirty-seven talks were given at teachers' institutes.

Twenty-six health talks were given before the students of some of the larger high schools of the state in observance of National Education Week.

Nineteen speakers were scheduled for one county for talks during Health Week.

Speaking appointments which have been filled represent practically all types of lay groups in the state, from Junior Auxiliaries of the Women's Clubs to men's organizations of all kinds.

The posters which were collected from health agencies in the United States have been used quite extensively at fairs, pageants of progress, and schools. Following an exhibit of these posters in Kankakee, a letter was received from one of the teachers: "These

posters form a most interesting as well as educational exhibit in our corridors and study halls. Judging by the many interested questions and comments from both teachers and pupils I know they have been of more than usual value. I personally consider them the best group of posters on health that I have ever seen."

The posters and films have proved fairly popular and if more up-to-date films were available the Committee could make a splendid use of them. As it is, most of them are so old fashioned that they do not excite any interest upon the part of the audience.

The Committee has worked closely with county medical societies in an effort to keep them informed concerning certain problems and questions which have come up and in working with the Scientific Service Committee in promoting interest and securing programs.

The Committee can only serve in the degree in which you make use of its services. The educational program is dependent on the interest of the profession itself and as their interest increases, so will the interest of the public increase.

Respectfully submitted,

R. R. FERGUSON, *Chairman.*

JEAN McARTHUR, *Secretary.*

Dr. Ferguson: I would like to ask the Secretary, Miss Jean McArthur, to say a few words.

Miss McArthur: We are hearing so much about education these days. Education is something that a good many people think is taught in "normal colleges by abnormal professors to subnormal students." I think you will see from the printed report that our Committee has an entirely different viewpoint on education.

I just want to thank you who are present as well as the doctors who are not here for the splendid cooperation you are giving us which makes our work possible. We appreciate the way in which you have accepted speaking appointments in different parts of the state, the assistance you have given in preparing and broadcasting radio talks, and the help and suggestions you have made regarding our press service.

The Chair: We will now have the report of the Scientific Service Committee.

#### REPORT OF SCIENTIFIC SERVICE COMMITTEE

May, 1928—May 1, 1929

The Scientific Service Committee has functioned chiefly as a Speakers' Bureau during the past twelve months, and has further attempted to stimulate activity in some County Societies that were having difficulty in securing speakers and arranging programs. Last September a letter was sent out to all Secretaries asking that they send in the names of physicians in their counties who might be called upon to fill appoint-

ments before scientific groups. A number of names were added to the list of speakers and at the present time about 300 speakers are listed in Chicago and down state. The subjects represented cover the entire field of medicine. It is now possible to schedule speakers over the entire state upon any subject requested.

An endeavor has been made to bring before the county societies the service to be secured through this Committee. Doctor Camp devoted one of his monthly news letters to the work of the Scientific Service Committee. Several letters have been sent out explaining the service and suggesting that programs be arranged through the Committee.

Some of the County Societies have found it much easier to secure speakers and arrange programs following the receipt of some service from the Committee, that is, speakers sent in from the outside have apparently had a stimulating effect and the local society has functioned without assistance after one or two initial programs. Some of the counties have been supplied with four or five programs—varying from the presentation of one scientific paper to clinical conferences furnished through the splendid cooperation of the medical schools in Chicago.

The chief difficulty has been in securing men down state to fill scientific appointments. The Committee has felt that this was due to the fact that when requests were made, the men selected did not have their papers ready. In some cases those wishing to speak had not given definite enough subjects to the Committee. These difficulties have been largely wiped out following the information received in reply to the letters sent out to the secretaries last September. With the completion of this definite list more opportunity will be given the men down state to fill appointments.

The office of the Educational Committee has been prepared to release news items concerning any medical meetings to newspapers in the State. The editors are glad to receive these notices and the public is interested in knowing what the profession is doing. Many societies have taken advantage of this service and have felt the benefits obtained from good publicity in their own and surrounding counties.

The Committee believes that County Societies would do well to plan their programs for an entire year, scheduling interesting subjects and good speakers, being careful to see that some phase of obstetrics is discussed one or more times, also some phase of Pediatrics should receive attention.

The following appointments have been filled by the Scientific Service Committee since May 1, 1928:

- 1928:
- May 3—Henry County Medical Society—Charles Spencer Williamson, Chicago, "Heart Disease"; Henry Schmitz, Chicago, "The Early Diagnosis and Treatment of Carcinoma of the Cervix."
  - May 3—Ford County Medical Society—S. E. Munson, Springfield.
  - May 11—Marion County Medical Society—James H. Hutton, Chicago, "The Endocrine Factors in Obesity.

Its Causation and Treatment"; "Thyroid and Ovarian Disturbances at Puberty and the Menopause."

- June 5—Fulton County Medical Society—Robert W. Keeton, Chicago; Charles M. McKenna, Chicago.
- June 22—Marion County Medical Society—John S. Coulter, Chicago.
- September 5—Woodlawn Hospital, Chicago—John S. Coulter, Chicago, "The Use and Abuse of Physical Therapy."
- September 11—Coles-Cumberland County Medical Society—James G. Carr, Chicago, "Medical Aspects of Gall Bladder Diseases."
- October 4—Whiteside County Medical Society—Charles M. McKenna, Chicago, "Tuberculosis of the Genito-Urinary Tract"; Anfin Egdahl, Rockford, "Tuberculosis."
- October 4—Warren County Medical Society—Malcolm L. Harris, Chicago, "The Periodic Health Examination."
- October 16—Rock Island County Medical Society—James H. Hutton, Chicago, "Ovarian Insufficiency."
- October 23—La Salle County Medical Society—James T. Gregory, Chicago, "The Acute Abdomen"; Roswell T. Pettit, Ottawa, "The Use of Small Doses of Radium at a Distance in the Treatment of Cancer"; Frank F. Maple, Chicago, "Treatment of Puerperal Sepsis"; Edward A. Oliver, Chicago, "Practical Points in Dermatology."
- October 25—Eighth Councilor District Meeting—Carl A. Hedblom, Chicago, "Differential Diagnosis and Treatment of Acute Abdominal Lesions."
- October 30—Pana District Medical Society—G. W. Staben, Springfield, "Advantages of Early Treatment in Certain Congenital Deformities"; Don Deal, Springfield, "Acute Abdomen"; G. C. Hunt, Springfield, "Views of Ringworm Fungus on the Hands and Feet"; H. G. Blankmeyer, Springfield, "Juvenile Athyrosis." Surgical Clinic held by Charles Patton, Springfield; Chest Clinic by Hermon H. Cole, Springfield; Medical Clinic by S. E. Munson, Springfield.
- November 20—Rock Island County Medical Society—F. L. Heinemeyer, Rockford, "Occiput Posterior."
- December 4—McDonough County Medical Society—S. E. Munson, Springfield, "Hypertension"; Don Deal, Springfield, "The Acute Abdomen"; Hermon H. Cole, Springfield, "Tuberculosis of the Lungs."
- December 11—Rock Island County Medical Society—Charles Spencer Williamson, Chicago, "The Newer Phases of the Diagnosis and Treatment of Primary and Secondary Anemias"; Frederick H. Falls, Chicago, "The Diagnosis of Intra-Uterine Monstrosities."
- December 13—DeWitt County Medical Society—William Harcourt Browne, Chicago, Obstetrical Program.
- December 20—Medical Society of Ft. Madison, Iowa—George B. Lake, Chicago, "Psychic Factors in Relation to Disease."

1929:



January 8—Rock Island County Medical Society—Marshall Davison, Chicago, "Abdominal Pain."

January 17—Christian County Medical Society—Quitman U. Newell, St. Louis, Mo.

January — —Elgin Physicians' Club—James H. Hutton, Chicago, "Some Common Endocrine Disturbances."

February 7—Iroquois County Medical Society—Charles M. McKenna, Chicago.

February 12—Rock Island County Medical Society—Nelson M. Percy, Chicago, "Goiter"; David J. Davis, Chicago, "Goiter."

February 13—Kankakee County Medical Society—Jesse Gerstley, Chicago, "Diarrheas in Children."

February 13—Union County Medical Society—L. A. Juhnke, Chicago, "Diagnosis of Uterine Hemorrhage."

March 6—Will-Grundy County Medical Society—James H. Hutton, Chicago, "The Interpretation of Symptoms."

March 7—Iroquois County Medical Society—L. A. Juhnke, Chicago, "Diagnosis of Uterine Hemorrhage."

March 7—Sangamon County Medical Society—Friedrick H. Falls, Chicago, "The Diagnostic Value of X-Ray in Obstetrics."

March 11—Knox County Medical Society—James G. Carr, Chicago.

March 12—Rock Island County Medical Society—William R. Cubbins, Chicago, "Intestinal Obstruction."

March 15—Alexander County Medical Society—George de Tarnowsky, Chicago, "Treatment of Fracture."

April 4—Sangamon County Medical Society—Carl A. Hedblom, Chicago, "Differential Diagnosis and Treatment of Acute Abdominal Lesions."

April 9—Rock Island County Medical Society—Philip H. Kreuscher, Chicago, "Rheumatism—Its Etiology and Treatment."

April 10—Will-Grundy County Medical Society—R. R. Ferguson, Chicago, "Medical Economics."

April 11—Iroquois County Medical Society—Paul Starr, Chicago, "Nephritis."

April 11—Kankakee County Medical Society—J. F. Hultgen, Chicago, "Medical Economics."

May 2—Henry County Medical Society—Jerome R. Head, Chicago, "Surgical Aspects of Lung Disease"; David J. Davis, Chicago, "Pathological and Bacteriological Aspects of Lung Abscess and Gangrene."

May 7—Mercer County Medical Society—Sidney Easton, Peoria, "Backache."

May 9—Bureau County Medical Society—Charles M. McKenna, Chicago, "Pre- and Post-Operative Management Following Prostatectomy"; Frank F. Maple, Chicago, "Puerperal Sepsis."

May 14—Rock Island County Medical Society—Philip H. Kreuscher, Chicago.

May 16—Williamson County Medical Society—Henry E. Irish, Chicago, "Non-Surgical Acute Abdomen in Children."

May 16—Carroll County Medical Society.

June 4—Winnebago County Medical Society—Paul B.

Magnuson, Chicago, "The Primary Care of Fractures as Compared with the Relief of Deformities Following the Maladjustment of Fractures."

June 11—Rock Island County Medical Society.

June — —Macon County Medical Society—John S. Coulter, Chicago, "After Care of Injury Cases"; J. P. Simonds, Chicago, "General Principles of the Pathology of Bone"; William R. Cubbins, Chicago, "Fractures Around the Knee Joint." Round Table Discussion, "Treatment of Fractures."

The total cost to the committee for the year has been \$541.13.

JAS. H. HUTTON, *Chairman,*  
Scientific Service Committee.

Dr. Hutton, Chicago: There are only three things to add. I think the Council had the idea that this service would be most valuable to the small County Societies. This has proved true. The service is being used more frequently of late by the small County Societies than in previous years.

(It is moved that the Committee reports be accepted. Motion seconded and carried.)

The Chair: We will now have the report of the Editor:

#### REPORT OF THE EDITOR

Another fiscal year has come to a close for the Illinois State Medical Society. The editor of the ILLINOIS MEDICAL JOURNAL makes his annual report with a feeling of optimism held in leash by the knowledge that the twelve months just ending have not seen medical victories snatched from the jaws of defeat, jaws that even yet are closed tightly on the throat of medical progress and security.

For despite the continued campaign in the columns of the ILLINOIS MEDICAL JOURNAL against the lethargy with which a large proportion of the profession views the ever-increasing encroachment of lay dictation upon the province and prerogatives and practice of medicine, the year just past has seen alarming fulfillment of those menaces against which this journal has so faithfully and so honestly crusaded. Not even the increased circulation, the finest showing of income returns in the history of the JOURNAL, nor the general respect with which the pronouncements of these columns are viewed, can compensate for the solar plexus blows that state medicine and socialistic groups have dealt the basic elements of a just and righteous system of medical economics and of scientific skill.

Not only has it been necessary during the past year for the thinking few to fight the battle of the soporific many against an extension of the Sheppard-Towner Bill, lately appearing legislatively as the Newton Bill, the progenitor of which is occupying a high place in the present cabinet, but the year has delivered as a lusty, sturdy infant the pay clinic, endowed foundations, universities and tax-supported medical schools practicing medicine. One proposition of the pauper-



izing tendency upon the part of misinformed and certainly misguided philanthropists has considered the feasibility of extending a free service or, at the most, a very low partial payment system to families with incomes ranging upward as high as \$6,000 per annum.

Coupled with the increasing tendency to practice medicine by corporations and through legislation, it is of small satisfaction to the editor of the ILLINOIS MEDICAL JOURNAL to see his predictions of the past years so undeviatingly approaching fulfillment. Like Cassandra of old, such verification of prophecy is disaster of such magnitude that even in justification of doctrines lies no small savour of satisfaction.

That there is a professional awakening to the need of careful consideration of medical ethics is borne out by a perusal of the program of the 1928 meeting of the Illinois State Medical Society in Chicago and the part played there by discussions of medical economics. That the status of medical ethics and the individual will be the most sensational of many vital factors during the coming year would seem to have been proven at the outset by developments of certain conditions in Chicago that have already been subjected to a more or less thoroughly one-sided airing in the lay press.

In his intense desire to at all times one hundred per cent. safeguard the vital interests of the individual physician, as well as the interests of organized medicine, the editor has had constantly in mind the vitalities to be guarded against as destructive eventualities in public economics and the future of both medicine and of the public health and welfare, and of national stability as the medical profession itself has constructed.

Summarizing briefly, some of the many evils against which the ILLINOIS MEDICAL JOURNAL has crusaded during the past and preceding years are:

1. Lay dictation and control of medical practice.
2. Endowed foundations entering practice of medicine.
3. Corporations engaged in medical practice.
4. Inimical medical legislation.
5. Political control and interference with medical practice.
6. Unrestricted activities of quacks with general public health.
7. Lay and semi-lay pay clinics for other than the poor.
8. Superseding of physician by overtrained nurse.
9. Health departments practicing general instead of preventive medicine.
10. Attempts by Congress and State legislatures to dictate therapeutic procedures. Diagnosis, dosage and demand should be regulated by scientific judgment in all its flexibility rather than by inflexible, legislative statute.
11. Attempts by lay organizations and individuals, and by capitalistic foundations to effect arbitrary control and supervision of disease, and of the sick and ailing to the elimination of the physician as an individual, or as a unit in a purely

scientific society, such as a city or county or state medical society or its divisional.

12. Attempts at fiat legislation that interfere in any way with the proper practice of medicine.
13. Attempts by politicians, misguided, ignorant or malicious, as the tools of cults, quacks and charlatans, to write upon the statute books of any state, county or city, legislation that will permit any impostor to enter the practice of medicine or in any way to assume care of the sick or ailing.
14. Attempts by corporations to act as intermediaries between physician and patient and thus eliminate the benefits to the patient of a direct contact with the medical advisor.
15. Attempts through various agencies to take from the hands of the family physicians, aided if necessary by a local specialist, the requisite periodic health examination.
16. Attempts to effect an indirect medical service anywhere and in any way through a third party.
17. Attempts to install an over-centralization of medical authority with all the dangers and destructive influences attendant upon such non-American bureaucracy.
18. Attempts to create a federal despotism or a modified soviet with socialization of medicine the touchstone for this calamity.
19. That the greatest need, legislatively speaking, in the United States today is decentralization of government at Washington. "America is the most law ridden country in the world. In fact, America is forced by law to do and prohibited by law from doing more things than had been prohibited or required in autocratic Europe before the war."
20. Bureaucracy is always a curse, and centralization a lethal menace under any conditions. Where the practice of medicine is concerned, it is fatal.
21. Various other similar and correlated vicious tendencies.

The causes which the JOURNAL is fighting for:

1. Defense of the medical profession from emotional vilification from misguided individuals in the profession and from ignorant individuals of the general public.
2. Protection of the profession from misleading opinions engendered in the public mind through unfair, untruthful, and bombastic newspaper publicity attained on the part of certain members of the profession from time to time.
3. Restoration of the rank and ranks of the family physician, that fundamental factor in the practice of medicine that has unfortunately suffered temporary displacement through the enthusiastic if not altogether balanced rush for specialization that has, through no precise fault of the doctors themselves, permitted a specious foothold for cults in the chasm between the service of the specialists and the average service afforded by the modern general practitioners.
4. Realization on the part of both mature doctor,

recent graduate and undergraduate student that the general public is demanding increasingly a punctilious service for those comparatively trivial ailments that comprise the bulk of human ailments and that proffer fertile mediums for the increase of charlatanism.

Outlook for the future is promising because of an awakening of the professional conscience to the wrongs that have been perpetuated against individual members. Loyal sons of mother science augur that protective action that will follow will bring the remedy. "Diagnosis is half the cure."

The editor wishes to express appreciation of the sincerest nature to his co-workers on the JOURNAL in every department, and especially to those members and officers of the county societies who have found time in the crowded moments of a busy practitioner's life to contribute to the pages of the ILLINOIS MEDICAL JOURNAL notes of the fraternity that have lent to our periodical that "little touch of human nature that makes the whole world kin."

To those physicians, research workers and specialists whose papers and articles, often accompanied by illustrations, have enabled the ILLINOIS MEDICAL JOURNAL to hold its proud place as the leading periodical of this nature throughout the United States, words of thanks can be but weak indices of the tributes these contributors deserve. For literally "by their works shall ye know them," and by their faith in the purpose and purport of the JOURNAL these contributors have been led to place at the disposal of these columns the benefit of their hours of heavy labor and nerve-racking strain.

CHARLES J. WHALEN, *Editor*,  
Illinois Medical Journal.

(It was moved that the report of the Editor be accepted. Motion seconded and carried.)

The Chair: We will now pass to the presentation of Resolutions:

Dr. Charles E. Humiston, Chicago: I desire to present a resolution which is not yet in exact form. I had placed in my hands yesterday a letter of instructions to registrars from one of the county coroners, which if carried out throughout the State, and put into effect, will discredit Illinois very much. There are more than two thousand registrars in the State of Illinois who are not doctors. Under the old ruling passed more than ten years ago registrars were not permitted to make out death certificates in cases where no medical man had been in attendance. With more than two thousand registrars certifying as to the cause of death, you can guess what might happen. The coroner, under these circumstances, is not to be consulted, and I think this House of Delegates should do something in

this direction. The resolution will be ready Thursday morning.

A resolution was presented by Dr. Frederickson, but not read.

Dr. Sloan read the following amendment to the By-Laws which was presented by Dr. T. B. Knox:

*Therefore Be It Resolved:*

That Section 7 of Chapter 10 of the By-Laws of the Illinois State Medical Society be amended by the addition of the words "or the United States Government" following the word "State" at the end of the paragraph, making the section read as follows:

When a member in good standing in a component society changes his residence to another County in this State, such change of residence shall terminate his membership in such component society and in the Illinois State Medical Society. Such member shall be entitled upon his request, to a demit from the Society whereof he has so been a member, which demit shall be issued without cost to him. Upon presentation of such demit to component Society in the County to which he removes upon his election to membership in the Society into whose territory he has removed, shall operate to reinstate him in the Illinois State Medical Society as of the date of his demit. This shall not apply to members in military service or in the service of the State or the United States Government.

The Chair: This amendment will lie on the table until the meeting Thursday morning.

We now come to the new business.

The Secretary: I have here the appeal of Dr. Louis E. Schmidt to the House of Delegates. To briefly summarize the case to the present time, Dr. Schmidt was tried and expelled from the Chicago Medical Society on April 9. This morning Dr. Schmidt's appeal to the Council was heard. The Council decided that the trial had been proper, and sustained the action of the Chicago Medical Society by unanimous vote.

On motion duly made and seconded the House was adjourned at 5:30 p. m. to meet again on Thursday morning at 8:30 a. m.

SECOND SESSION

*Thursday Morning, May 23, 1929*

The Thursday morning session was called to order at 8:58 a. m. by Dr. Simonds.



The Chair: The first order of business is the roll call by the secretary.

The secretary called the roll and reported that sixty-five delegates were present, which is sufficient to constitute a quorum.

The Chair: The next order of business is the report of the Credentials Committee.

Dr. C. F. Newcomb, Champaign: The committee has certified sixty-two downstate delegates, and fifty-three Chicago Medical Society delegates, a total of one hundred fifteen.

The Chair: If there are no objections the report will be approved as read.

The next order of business will be the election of officers. Nominations for the president-elect are open.

Dr. E. P. Sloan: I wish to present the nomination of Dr. W. D. Chapman, Silvis, for president-elect. (Motion seconded by Dr. W. H. Maley, Galesburg.)

Dr. J. W. Van Derslice, Chicago: I move that the nominations be closed and the secretary instructed to cast the affirmative ballot for Dr. Chapman. (Motion was seconded and carried and the chair declared Dr. Chapman elected.)

The Chair: Nominations are in order for the first vice-president.

Dr. W. H. Maley, Galesburg: I wish to place in nomination the name of Dr. R. L. Green of Peoria. (Motion seconded.)

Dr. F. O. Fredrickson, Chicago: I move the nominations be closed and the secretary instructed to cast the affirmative ballot for Dr. Green for first vice-president. (Motion seconded and carried, and the chair declared Dr. Green elected.)

The Chair: Nominations for second vice-president are in order.

Dr. P. B. Blodgett, Chicago Heights: I wish to nominate Dr. Henry R. Krasnow, Chicago. (Motion seconded.)

Dr. F. O. Fredrickson: I move the nominations be closed and the secretary instructed to cast the affirmative ballot for Dr. Krasnow for second vice-president. (Motion seconded and carried, and the chair declared Dr. Krasnow elected.)

The Chair: Nominations for treasurer are in order.

Dr. R. E. Hunt, Belvidere: I wish to nomi-

nate Dr. A. J. Markley to succeed himself. (Motion seconded.)

Dr. W. H. Maley, Galesburg: I move the nominations be closed and the secretary instructed to cast the affirmative ballot for Dr. Markley as treasurer. (Motion seconded and carried and the chair declared Dr. Marley elected.)

The Chair: Nominations for the Secretary are in order.

Dr. W. H. Maley, Galesburg: I wish to nominate Dr. Harold M. Camp, Monmouth, to succeed himself. (Motion seconded.)

Dr. E. P. Sloan, Bloomington: I move the nominations be closed and the president be instructed to cast the affirmative ballot for Dr. Camp as secretary. (Motion seconded and carried and the chair declared Dr. Camp elected.)

The Chair: Councilors for the First, Second, Third, Eighth and Ninth districts are to be elected.

Dr. W. E. Kittler, Rochelle: I wish to place in nomination Dr. E. H. Weld as Councilor for the First District. (Motion seconded.)

Dr. E. H. Ochsner, Chicago: I move the nominations be closed and the secretary instructed to cast the affirmative ballot for Dr. Weld as Councilor for the First District. (Motion seconded and carried, and the chair declared Dr. Weld elected.)

Dr. T. S. Robertson, Chicago: I wish to nominate Dr. E. E. Perisho, Streator, as Councilor for the Second District to succeed himself. (Motion seconded.)

Dr. G. W. Post, Chicago: I move the nominations be closed and the secretary instructed to cast the affirmative ballot for Dr. Perisho as Councilor of the Second District. (Motion seconded and carried, and the chair declared Dr. Perisho elected.)

Dr. J. W. Van Derslice, Oak Park: I wish to nominate Dr. Frank R. Morton, Chicago, as Councilor for the Third District. (Motion seconded.)

Dr. F. O. Fredrickson, Chicago: I move the nominations be closed and the secretary instructed to cast the affirmative ballot for Dr. Morton as Councilor for the Third District. (Motion seconded and carried, and the chair declared Dr. Morton elected.)

Dr. C. F. Newcomb, Champaign: I wish to nominate Dr. Cleaves Bennett, Champaign, as



Councilor for the Eighth District. (Motion seconded.)

Dr. C. E. Wilkinson, Danville: I move the nominations be closed and the secretary instructed to cast the affirmative ballot for Dr. Bennett as Councilor for the Eighth District. (Motion seconded and carried and the chair declared Dr. Bennett elected.)

Dr. J. E. Reed, Benton: I wish to nominate Dr. J. W. Hamilton, Mt. Vernon, as Councilor for the Ninth District, to fill the unexpired term of Dr. Andy Hall. (Motion seconded.)

Dr. E. P. Coleman, Canton: I move the nominations be closed and the secretary instructed to cast the affirmative ballot for Dr. Hamilton as Councilor for the Ninth District. (Motion seconded and carried, and the chair declared Dr. Hamilton elected.)

The Chair: The next order of business will be the election of Standing Committees:

(Nominations were presented in each case, and the secretary instructed to cast the affirmative ballot, and the chair declared them elected.)

The following committees were elected:

*Public Policy:* Drs. W. S. Bougher, Chicago; H. J. Way, Chicago, and George Michell, Peoria.

*Medical Legislation:* Drs. John R. Neal, Springfield; C. E. Humiston, Chicago, and Edward Bowe, Jacksonville.

*Medico-Legal:* Two members elected—Drs. R. O. Hawthorne, Monticello, and Oscar Hawkinson, Chicago.

*Relations to Public Health Administration:* Drs. E. W. Mosley, Chicago; Ralph Hinton, Elgin; E. D. Levisohn, Chicago; Gottfried Koehler, Chicago, and T. B. Knox, Quincy.

*Medical Education and Hospitals:* Drs. E. H. Ochsner, Chicago; W. M. Hartman, Macomb, and W. R. Marshall, Clinton.

The Chair: The next order of business will be the election of delegates and alternate delegates to the American Medical Association.

(Each Delegate was nominated in turn and the secretary instructed to cast the affirmative ballot for the five. The chair then declared them elected.)

The following were elected:

C. E. Humiston, Chicago; C. L. Skaggs, East St. Louis; Mather Pfeifferberger, Alton; J. W. Van Derslice, Chicago; R. L. Green, Peoria.

Each alternate delegate was nominated in turn

and the secretary instructed to cast an affirmative ballot for the five. The chair then declared them elected. The following were elected:

W. S. Bougher, Chicago; J. J. Pflock, Chicago; E. P. Coleman, Canton; M. E. Brennan, East St. Louis; Andy Hall, Mt. Vernon.

Dr. Edward Bowe, Jacksonville: Are these alternate delegates elected for each delegate?

Secretary: They are alternates at large according to the ruling of the American Medical Association.

The Chair: The next order of business is to fix the per capita tax for the coming year.

Dr. W. H. Maley, Galesburg: I move the per capita tax remain the same, \$8.00 per year. (Motion seconded and carried.)

The Chair: The next order of business is the selection of a meeting place for 1930.

Dr. J. W. Van Derslice, Chicago: I wish to make the following motion, that the House of Delegates vote their preference as to the meeting place, but that the final decision be left to the committee in order that investigation may be made as to hotel facilities, exhibition hall, and suitable scientific halls. (Motion seconded and carried.)

Dr. J. W. Van Derslice, Chicago: I move that we permit them to name a place of preference. (Motion seconded and carried.)

Dr. H. F. Bruning, Chicago: I move that those who wish to entertain us next year be allowed to present their invitations. (Motion seconded and carried.)

Dr. E. A. Kingston, president of the Will-Grundy Medical Society, presented an invitation from Joliet. (Seconded by Dr. Harry Woodruff of Joliet.)

Dr. H. H. Cole extended an invitation from Springfield.

Secretary: I have received a number of letters from civic authorities of Joliet.

Dr. C. S. Nelson, Springfield: Our County Society instructed my colleague, Dr. Cole, to extend a cordial invitation to the Society to come to Springfield next year when the legislature is not in session; but since the Society has never been in Joliet, I would like to suggest to my colleague that Springfield withdraw.

Dr. E. H. Ochsner, Chicago: I move that we vote on the two places. (Motion seconded.)

Dr. F. O. Fredrickson, Chicago: I would like

to amend the motion that we take a rising vote. (Amendment seconded.)

(The amendment was accepted and the motion carried.)

The Chair: We will now proceed to vote on the choice of places in the order in which they were referred to the Council. (Joliet received forty-eight votes, and Springfield twenty.)

The Chair: I declare Joliet as the place of preference for the 1930 meeting if suitable arrangements can be made.

Dr. Edward Bowe, Jacksonville: For twenty-five years I have been coming to the meetings of this Society. I believe as our organization becomes more effective, and as we progress in constructive measures in Illinois, it is imperative that we meet in Springfield at least every other year. In that way we get our feet on the ground in the place where the work is done.

#### UNFINISHED BUSINESS

The Chair: I will call for the report of the Resolutions Committee.

#### 1. PROPOSED AMENDMENT TO THE BY-LAWS

(Introduced by Dr. T. B. Knox)

(See page 31)

Dr. Sloan: I move the adoption of this resolution. (Motion seconded and carried unanimously by a rising vote.)

#### 2. RESOLUTION OF THANKS TO PEORIA

(Introduced by Dr. Edward Bowe)

*Therefore Be It Resolved:*

The Illinois State Medical Society in session, hereby wish to convey to Mayor Woodruff and the city government of Peoria their recognition and appreciation of the many courtesies and kindnesses extended to them during the present meeting.

To the Peoria Police Department especially they wish to express appreciation for the assistance and direction in making this meeting pleasant and agreeable.

To the Peoria Association of Commerce and M. J. Finn, Convention Secretary, for providing a meeting place, accommodations and all possible means of making the meeting a success, the Society also wishes to express thanks and appreciation.

To the managers of the Peoria hotels for their

efforts and courtesies in providing accommodations and comfort for their guests during this meeting we also wish to express our thanks and appreciation.

To the officers and members of the Ladies' Auxiliary, and especially to Mrs. Sprenger, chairman of arrangements, and to Mrs. Mundt, president of the organization, the Society wishes to express its appreciation and thanks. The Society is deeply appreciative of the value and assistance rendered by this department of organized medicine.

To Dr. R. L. Green for his arduous work covering a period of months to make this meeting a success, the State Society is under renewed and additional obligation. The members of this Society wish to express to him a deep-seated appreciation of fraternal friendship and fellowship.

Dr. E. P. Sloan: I move its adoption. (Motion seconded and carried.)

#### 3. CARE AND TREATMENT OF THOSE AFFLICTED WITH MENTAL DISEASES

(Introduced by Dr. Otrich)

WHEREAS, The care and treatment of those afflicted with mental disease has become a well recognized science and a part of medical education and practice. It involves all the fundamentals of medical education, medical experience, and medical science, therefore, if real scientific and effective service is to be rendered and advancement and progress to be made in this department of medicine, those who are qualified by education, training and experience should be placed in the directional and practical supervision of this department of medicine in both private and public institutions. Therefore Be It

*Resolved,* By the House of Delegates of the Illinois State Medical Society, in session, that Honorable Louis L. Emmerson, Governor of Illinois, be respectfully requested to place at the head and direction of State Institutions for the treatment of the insane, the feeble-minded and all other institutions requiring medical care and supervision, those who are qualified by education, training and experience.

Dr. E. P. Sloan: I move its adoption. (Motion seconded and carried.)



## 4. ILLINOIS HOMEOPATHIC SOCIETY

(Introduced by Dr. E. H. Ochsner)

*Therefore Be It Resolved:*

That the Illinois State Medical Society express its appreciation to the Illinois Homeopathic Medical Society for its endorsement of the action taken in the affair of Dr. Louis E. Schmidt.

Dr. E. P. Sloan: I move its adoption. (Motion seconded and carried.)

## 5. RESOLUTION OF SYMPATHY TO DR. CRILE

(Introduced by Dr. Edward Bowe)

WHEREAS, By accident and calamity, Dr. John Phillips and many of his colleagues and associates met an untimely death, and Dr. George Crile has undergone great mental and physical suffering, and in recognition of the great service rendered humanity and organized medicine and surgery by these colleagues and their long and valued association and friendship with the Illinois State Medical Society. Therefore Be It

*Resolved*, That the Illinois State Medical Society in session send a message of condolence and sympathy to the relatives of Dr. John Phillips and colleagues, and of sympathy to Dr. Crile.

Dr. E. P. Sloan: I move its adoption. (Motion seconded and carried.)

## 6. RESOLUTION OF SYMPATHY TO FAMILY OF DR. W. F. GRINSTEAD AND TO

DR. D. B. PENNIMAN

(Introduced by Dr. Edward Bowe)

*Be It Resolved*, That the Illinois State Medical Society in session send a message of condolence and sympathy to the family of Dr. W. F. Grinstead, and to the Alexander County Medical Society. Be It Further

*Resolved*, That the Illinois State Medical Society in session send a message of sympathy and best wishes for a speedy recovery to Dr. D. B. Penniman.

Dr. E. P. Sloan: I move its adoption. (Motion seconded and carried.)

## 7. INSTRUCTIONS ON MEDICAL ETHICS TO SENIOR STUDENTS AND INTERNS

(Introduced by Dr. F. O. Fredrickson)

WHEREAS, There exists among medical men, especially those beginning practice, a lack of knowledge and interest in medical organization in one and all its phases, and

WHEREAS, The most impressive period during which to instruct, inspire and interest medical men in medical organization would be in their formative years, that is, while serving their internship or while in their senior year in medical school, and

WHEREAS, By such instruction many valuable and able workers should be added to our altogether too small number of active members, thereby strengthening and advancing the cause of organized medicine; Therefore Be It

*Resolved*, That the House of Delegates to the Illinois State Medical Society arrange, if possible, through proper channels, a course of lectures setting forth the benefits of medical organization, medical economics, medical legislation and medical ethics to senior classes in the medical schools and also to interns at the various hospitals, at least four lectures to be given each year, these lectures to be given under the auspices of the Illinois State Medical Society and its component Societies.

Dr. E. P. Sloan: I move its adoption. (Motion seconded and carried.)

## 8. FOOD FADS

(Introduced by Dr. John R. Neal)

WHEREAS, Much misinformation is promulgated today on the question of diets, etc., causing the introduction in the American diet of food fads.

Very few of these fad foods can take the place of the older staple foods; namely, good meat, dairy products, green vegetables, fruits, and better grades of bread prepared from white flour.

The allegation that white bread, meat or any other staple food, when employed in mixed diet, is responsible for certain grave illnesses, is not supported by scientific facts. Therefore, Be it

*Resolved*, That we desire in the public interest, to place on record that in our opinion:

1. The exaggerated claims for various fad foods are entirely unwarranted by scientific evidence or practical experience; and the advertising and other propaganda furthering their substitution for the older articles of diet should be condemned.

2. No food is a perfect food; but a diet consisting of dairy products (especially milk), leafy vegetables, fruits, meats and easily digested



starches for heat and energy, furnishes an excess of all food factors necessary for proper growth and nutrition and resistance to disease.

3. Any variation from a normal diet should only be prescribed by a properly trained advisor and after a careful study of the dietary requirements of the individual seeking advice.

Dr. E. P. Sloan: I move its adoption. (Motion seconded and carried.)

#### 9. ENFORCEMENT OF SECTION 8 OF THE VITAL STATISTICS ACT

(Introduced by Dr. C. E. Humiston)

WHEREAS, The State of Illinois ranks first among the States of the Union in the accuracy and completeness of its mortality statistics, and such mortality statistics are of vital importance to the public and the medical profession in the study of the various causes of death to determine the progress being made by modern science in controlling and eliminating certain hitherto fatal diseases as direct or contributing causes of death, and

WHEREAS, The Coroner of one of the most populous counties of this State, basing his action upon an opinion rendered by the Attorney General in 1919 construing Section 8 of the Vital Statistics Act of Illinois, has notified all Undertakers and Local Registrars in that County, that in cases of death occurring without medical attendance the Local Registrar and not the Coroner *must* make out the certificate of the cause of death from the statements of relatives and other persons if there is no suspicion that the death results from violence, casualty or other undue means, and

WHEREAS, A large majority of Local Registrars in Illinois are laymen who are thus incapable in most cases through lack of knowledge or training of determining the direct or contributing causes of death, and

WHEREAS, The Attorney General's opinion above referred to, and the action taken thereunder, furnish an opportunity to persons unlicensed by the laws of this State to treat the sick, to obtain erroneous, and if so inclined, deliberately false certificates as to the causes of death, thus making possible the concealment of felonies and criminal negligence, particularly where bodies are cremated, and

WHEREAS, The opinion above referred to does

not follow the language of the statutes in that it substitutes an ill-inclusive mandatory *must* for the discretionary and exceptional *may*, as found in Section 8 of the Vital Statistics Act. Therefore, Be it

*Resolved*, By the House of Delegates of the Illinois State Medical Society, in Convention Assembled at Peoria, Illinois, this 23rd day of May, 1929,

*First*, that we call upon the Coroners of all counties in the State to make an investigation sufficient to determine the cause of death in all cases where a death occurs without there having been in attendance some person properly licensed by the laws of this State to treat the sick, and

*Second*, that we call upon the present Attorney General of this State to review opinion No. 9265 given by the Attorney General on July 9, 1919, construing Section 8 of the Vital Statistics Act.

Dr. E. P. Sloan: I move its adoption. (Motion seconded and carried.)

Dr. C. E. Humiston, Chicago: What I want to emphasize is this: This is a long sought opportunity for those who are not licensed to treat the sick to make away with what happens without any investigation by law of the land, especially by registrars giving permission to have the body cremated. I never mention sects or cults, but you know who are favored by these resolutions. You all know what has happened since the House of Delegates met the day before yesterday. On the 20th of May there occurred in Oak Park the death of a patient under treatment of an unlicensed practitioner. The registrar of that village, under pressure of this opinion, which is erroneous in its interpretation, was compelled to make out certificate. The cause of death was unknown. This particular individual died after years of treatment by a certain cult wherein no doctor was tolerated. His death occurred no one knows how, and no one knows why. The registrar certified that the cause of death was unknown. Unless this proceeding was interfered with yesterday, this body was cremated. These names are available.

Another case, a young woman of twenty, died or passed out or something, because there is no such thing as dying in this cult; a doctor was called in by the undertaker, and asked to sign the certificate. This doctor having had training

along professional lines, said: "I know nothing about this case. I understand she stopped menstruating a short time ago. She appears to be dead, but further than that I know nothing."

The undertaker said: "It is heart disease." The undertaker took it up with the coroner's office, and was told to sign "myocarditis." He signed "probably myocarditis." Now the door is open for the doing away with victims of criminal abortion, and with doing away with undesirable individuals as bad as the Sicilian plan, because the certificate of a registrar, forty per cent. of whom are ignorant and afraid to look at a dead person, is sufficient for the disposal of a body. The fact that a person is found dead and no one licensed to practice medicine is in attendance, is sufficient evidence for a coroner's investigation.

Dr. E. H. Ochsner, Chicago: I have a practical suggestion to make. We are constantly urged in this State to be accurate in our statistics; birth records and death certificates, in order that our vital statistics may be perfect. I saw a large sign in the Exhibition Hall to this effect. We are admonished if we do not report births promptly, and we are chastised if we do not make our death certificates promptly. That an official of the State of Illinois will issue a certificate on such evidence as is presented by Dr. Humiston is incredible, but I believe it is true. I have one suggestion to make at this time; that is, that the proper committee take this matter up with the Underwriters' Association. The Underwriters' Association might be vitally interested in it. I have made this observation, if the medical profession tries to get things over alone they are accused of almost everything from horse stealing to perjury. I think this should be assigned to the proper committee with instructions to get in touch with the Underwriters' Association.

Dr. Edward Bowe, Jacksonville: This is a vital question. It is not a new one. There are certain individuals and certain groups that have been interested in this. We must proceed with caution because it is a very technical and vital question. Our method of dealing with this question must be positive and certain. I quite agree with Dr. Humiston that to those of us who have read the statutes there can be but one interpretation. In the language of the statutes

there is only one person who can issue a statement for the disposal of a human body that dies without the attendance of a licensed physician, and that is the coroner. There are dozens of other opinions. Let me tell you these people do not proceed without advice. They have legal advice and they are going to try to break through. Therefore, we must proceed cautiously. What I want is that this resolution be referred to the Medico-Legal Committee for analysis. I believe we will be able to meet it, and beat it.

Dr. P. B. Blodgett, Chicago Heights: This matter is a bad thing for the profession, and what is bad for the profession is bad for society. This is a means by which dishonest public officials, by playing with certain groups, can obtain power. It is a question that concerns the Illinois State Medical Society, as the guardian of public health officials who honestly perform their public duty will not place such an interpretation upon this statute. I believe it is within the right of this House of Delegates to insist that this statute be interpreted, and carried out according to the law.

Dr. Edward Bowe, Jacksonville: I move that the resolution be referred to the Medico-Legal Committee.

Dr. C. A. Hercules, Harvey: I think it should be placed with the Legislative Committee. The Medico-Legal Committee has dealt with the malpractice statute.

Dr. G. Henry Mundt, Chicago: It seems perfectly logical that the proper committee is the Public Policy Committee. I move as an amendment that the resolution be referred to the Public Policy Committee.

Dr. C. E. Humiston, Chicago: This resolution is a recommendation from the Legislative Committee. The question is whether the House of Delegates endorses the stand. This resolution should be adopted, and then the carrying into effect can be the work of one of the committees. I think the Legislative Committee can handle it properly through the proper channels, maybe better than any other committee. I think the question is on the adoption of the resolution rather than the finding out of what committee it belongs to.

Dr. Edward Bowe, Jacksonville: I withdraw my motion, and move the adoption of the resolution. (Motion seconded and carried.)



Dr. Sloan, Bloomington: I move that the Legislative Committee be authorized to secure the assistance of the Counsel of the State Society, and such other assistance as appears necessary to have the power to act on this resolution. (Motion seconded and carried.)

Dr. Tuite, Rockford: The suggestion made by Dr. Oschsner was that the Underwriters' Association be consulted.

Dr. C. E. Humiston, Chicago: That is included in the motion.

(Motion carried unanimously.)

Dr. G. Henry Mundt, Chicago: Relative to the resolution regarding the action of the Illinois Homeopathic Medical Association, if we are sufficiently interested I think it would be well to telegraph this society.

Secretary: This has been done.

The Chair: I shall ask Dr. Tuite to present the incoming officers.

Dr. Tuite, Rockford: I wish to present Dr. W. D. Chapman, President-elect.

Dr. Chapman, Silvis: I think you know that I take this thing seriously. I feel a sense of being more highly honored than ever before in my life. I am willing to admit that we are a wonderful family. If I should attempt to state the merits of the Illinois State Medical Society, you would all get tired. I do accept as a serious charge all and any work which is placed upon me by this society, and promise to make an honest endeavor to serve in any capacity chosen. I can only thank the members of the House, and in doing so I wish you to believe that the thanks are real. I have learned through observation that the President-elect is not supposed to talk. He is a student in training to learn the work which is to come. I propose to make that my year's work, and I shall endeavor to turn it to advantage.

(The officers were introduced.)

Dr. G. Henry Mundt, Chicago: I should like to introduce the incoming President, Dr. F. O. Fredrickson.

Dr. F. O. Fredrickson, Chicago: I consider it a great event to become inducted with the presidency of this wonderful medical organization, the best state medical society in the United States. I think we ought to reverse the proceeding. I think probably I shall learn a great deal from Dr. Chapman during my incumbency

as President of this Society. Dr. Chapman has done a great deal of constructive work with organized medicine. I do not believe he needs any education. I shall look to Dr. Chapman for a great deal of assistance during the coming year.

Dr. John E. Tuite, Rockford: Dr. F. O. Fredrickson will be inducted into office at 1:30 this afternoon. On this occasion I wish to say that this is according to the By-Laws. It is my opinion that the proper time for the induction of the President is right now at the close of the meeting of the House of Delegates. We cannot do it today on account of the By-Laws. I believe next year an amendment to the By-Laws should be introduced at the first session and acted upon in time to have the induction of the President take place Thursday morning.

On motion duly made and seconded the House of Delegates adjourned *sine die* at 10:45 A. M.

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## LEGISLATIVE COMMITTEE ILLINOIS STATE MEDICAL SOCIETY SPRINGFIELD, ILLINOIS

### FINAL BULLETIN

June, 1929.

Article two of the constitution of the Illinois Medical Journal in part says,—“and to enlighten and direct public opinion in regard to the great problems of state medicine,” it is therefore fitting and necessary that the Society be ever alert and constantly observe the trend of legislation proposed during each session of the Illinois general assembly.

In the June issue of “*Forum*,” which styles itself as “The Magazine of Controversy,” is an article giving the advantage of state medicine and written by a nondescript advocate. This same author wrote an appendix to Moore’s “American Medicine and the People’s Health,” about which the editor of the *New York Medical Journal* had this to say,—“Neither medicine nor human conduct is perfect. Around the foibles of each he weaves his theme. The author avows an open mind and then in his text reveals a mind committed to organized state medicine, to a machined merchandized sick service. Here subtle, and there frank, by innuendo and stratagem, he argues for an industrialized pro-



fession, for the socialization of curative as well as of preventive medicine."

By such utterances it is quite evident that even the educated must be schooled in the danger of state medicine from the public's standpoint.

If the editorial columns of our large newspapers were consistent they would take more interest in dangerous medical bills introduced in the Legislature, and give less publicity to the Schmidt case.

The medical profession's record for the cause of humanity should clearly demonstrate that the ethical medical societies are the greatest and most potent factors in the protection of the public from low grade medical men and the cultist.

The session of the legislature just closing was replete with its usual interesting attempts of the cultists to gain recognition. The Chiropractors were represented by a very able attorney who spent practically all of four months in Springfield maintaining a persistent lobby, but their bill was defeated by a vote of ten to one.

The Naprapaths were represented by a downstate lawyer who was sincere, and delivered a most interesting oration before the Judiciary Committee of the House. After weeks of lobbying their bill was defeated by a vote of twenty to zero.

The Anti-vivisectionists were a new group who sought legislative favor. They also employed an attorney to lead them to victory and they were amply financed and backed by a well dressed lobby of beautiful women.

The Chicago Medical Schools, ably represented by Dr. A. C. Ivy and Dr. A. J. Carlson, succeeded in preventing the Legislature from making the saddest of all mistakes, that of abolishing animal experimentation. We are informed that the ladies will be back in two years with a similar bill applicable to dogs only.

Our likeable old biennial, Dr. Clark,—the Sanatologist with his gracious smile and delusions of grandeur,—was with us all session. From the earliest day in January when the Legislature convened, he was in evidence in the House of Representatives, surrounded by a large group of lobbyists. Faithfully did they work for almost five months. At one time he had nearly

thirty of his cured (Sic) patients to help him. Finally his bill came to a vote in the House and it received but thirty of the coveted seventy-seven votes. And thus will the citizenry of Illinois be denied legalistic sanitology for at least two years.

It is surprising the amount of money that the cults spend each year. Some members of the Illinois Medical Society feel that their small annual dues are excessive. Every chiropractor puts in upwards of one hundred dollars each legislative year for legislative activities alone.

Dr. B. J. Palmer, the hydrocephalic boss (pardon, we mean the fountain head) of Chiropractic, recently said, "There has been \$250,000 of chiropractic money spent in California in the last year—this will probably be the last time you will see me as a Chiropractor, as I do not propose to lose my good money in fighting against sound arguments." Poor old B. J. is speaking in pathetic terms, for the continually tightening laws have reduced the attendance in the Palmer School of Chiropractic from three thousand five hundred to less than three hundred.

The barbers introduced a bill which was subsequently withdrawn at our suggestion. It would have privileged the barbers to treat innumerable skin diseases. The Beauty Culturists were fighting the barbers and their bill also was killed. We believe there is no need for either law but proper sanitary inspection under the Department of Public Health for all shops would suffice.

An ornate license from the State of Illinois is issued to Bridget Maloney, and, presto,—Bridget the house-maid becomes a Beauty Culturist and owner of the "Dolores Shoppe."

The very fact that the barber's law will not permit the beauty culturist to cut hair, and the beauty culture law will not allow the barber to curl hair, conclusively proves that our law makers indulged in a "Roman Holiday" when deliberating such measures, for the barbers and beauty culturists are engaged in mortal combat, (legislatively speaking), at this time.

A ludicrous effort on the part of the famous "Ritholz family" of Chicago to legalize mail order optometry was squelched in the Judiciary Committee by a vote of eighteen to three. If this measure had become a law, it would have

permitted the tramp spectacle man to play his nefarious trade among the rural districts, reaping a good harvest without interference by the law.

Several old age pension bills went into the discard. Old age pensions are not far removed from a universal compulsory health insurance law, and both are double first cousins to state medicine.

Support of a number of bills was withdrawn when the proponents were shown the needlessness of them as far as the public health was concerned. One of this sort was Senate Bill No. 398, which provided a severe penalty if a physician treated a gun shot wound and did not report the same to the police. It was innocent enough in its meaning, destined to aid in catching criminals, but the unfair thing about it was that the physician was the only one having knowledge of the shooting who had to report it. It was afterwards explained that the bill was aimed at curtailing chicken stealing in the southern part of Illinois. The bill was withdrawn at our request.

There were Thirteen Hundred Fifty-seven bills introduced in the Fifty-sixth General Assembly in this state. Of that number nearly one hundred fifty had a direct bearing on the medical profession and public health. Overly fifty of the above number were actively opposed by the legislative committee of this society.

A member of your committee appeared at sixty different committee hearings. Many of these hearings were short, while others consumed several hours. We are very pleased to report that no bills which we opposed were successful.

This office did not issue as many bulletins this year as formerly. As long as we were able to keep bills in the respective committees of the House and Senate, it was unnecessary to call upon the entire list of physicians throughout the state for their aid. But we did augment these requests with thousands of personal letters. At the beginning of the session we directed a personal letter to each member of the Chicago Medical Society outlining in rather a brief way our plans of legislative work, and solicited replies from those who were willing to help if the situation demanded. The results are very gratifying, and we received replies from over five

hundred who were willing to become active if called upon.

The Educational Committee listed for us every member of the Chicago Medical Society according to the senatorial district in which he resided. It was not difficult, therefore, to get physicians in the immediate neighborhood of any member of the legislature to interview him regarding any bill in which we were interested. This plan worked out satisfactorily, as evidenced by the outstanding defeats experienced by a number of bills in the several committees, and we are glad to acknowledge the very fine co-operation from the members of the Chicago Medical Society.

The Councillors of the State Society residing in Chicago are to be congratulated for their work. Our records show that the members of the legislature residing in the Twenty-first and Twenty-fifth districts voted consistently in our favor throughout the session. Therefore, special thanks is due Dr. J. S. Nagel and Dr. R. R. Ferguson, the two councillors who reside in those districts. While the committee is duly grateful to all the councillors, it is to be noted that those in Chicago have a much more difficult task to establish a personal contact with Senators and Representatives than do those of us who reside in the less populated districts.

Dr. C. J. Whalen, Editor of the Illinois Medical Journal, published all communications sent to him from the legislative committee. The bulletin of the Chicago Medical Society was also very kind in printing such articles as would help disseminate the problems of the legislative committee.

While the Officers and Councillors of the Society kept an ever watchful eye on the legislative work and are to be complimented, nevertheless, the fifteen hundred physicians on our mailing list, who almost unanimously responded to our requests, are deserving of a great deal of praise, and the legislative committee is indeed very grateful for their excellent help.

The Society's work this year has resulted in an outstanding success which was attained by the co-operation of the above mentioned groups and individuals.

C. E. Humiston, M. D.,  
J. R. Neal, M. D.,  
Edward Bowe, M. D.,  
Legislative Committee.



## SENATOR GESSINGER PROPOSES THE ABOLISHMENT OF THREE SOCIAL- ISTIC (PRESENT) DEPART- MENTS OF THE PRESI- DENT'S CABINET

LAITY REALIZES TRUTH OF MEDICAL PROPHE-  
CIES AS TO SOCIALISTIC TENDENCIES OF  
GOVERNMENT AS INDICATED BY EX-  
CERPTS FROM KESSINGER'S

Those who were privileged to hear Dr. William D. Chapman, president-elect Illinois State Medical Society and for several years chairman of the council of the state society, speak before one of the north shore women's clubs twelve months or a year ago, will note with interest how the thoughts expressed at that time by Dr. Chapman are set forth similarly but with even more emphasis in the following article taken from Kessinger's *Mid-West Review* under date of May, 1929.

Entitled "Hoover's Plans" the article reads as follows:

It is rumored that Hoover plans not only to change his cabinet, but also to enlarge it.

Mellon and Davis are to go after one year.

A new department of "Health and Education" is to be added.

Dr. Wilbur, now Secretary of Interior, is to be made the first Secretary of Health and Education.

Now all these may be the wildest kinds of rumors.

But the report about "Health and Education" seems fairly accurate.

And the constant expansion of the cabinet, we believe, is a mistake.

### THE GROWING CABINET

Starting with the "original five" in Washington's cabinet we have added:

Secretary of Navy (established 1798).

Secretary of Interior (1849).

Secretary of Agriculture (1889).

Secretary of Commerce and Labor (1903).

Divided (1913).

Now we have it reported that President Hoover will seek to add another department—Health and Education.

If this succeeds, some other President will ask the division of this department into two departments, one "Health" and the other "Educa-

tion," just as the Department of Commerce and Labor was established as one in 1903 and ten years later made two.

### TOPSY

A good deal of our government is like Topsy—it just grew!

But where will it stop?

What does it mean in our onward sweep toward paternalism and bureaucracy?

This kind of talk may seem sacrilegious, blasphemous, unpatriotic, un-American and un-Republican to some readers, but honestly and frankly and seriously, what will the harvest be?

### CABINET DEPARTMENTS

As long as we have the present cabinet offices, it is little wonder that an efficient executive like Herbert Hoover will busy himself in a drastic departmental re-organization.

Why should Prohibition Enforcement ever have been put under the Secretary of Treasury instead of under the Attorney General where it belongs?

Why should the Secretary of Labor have the Immigration law to administer instead of the Secretary of State?

Who can explain such monstrosities?

### NEW CABINET MEMBERS

Shall we have a Department of Health and Education?

What for?

When the *federal government starts taking a hand in schools and education, it might just as well interfere in the matter of churches and religion.*

### OTHERS WILL COME

If President Hoover establishes "Health and Education" then someone in the future will want just "Education" for one, and "Health" or "Public Welfare," whichever nomenclature takes his fancy, for the other.

Then, if we are to have Secretaries of War and Navy, why not Secretaries of Roads and Air, and a dozen others?

### OLD CABINET PLACES

Wouldn't it be a good idea to do away with the Secretaries of War and Navy and combine the two in a "Secretary of Preparedness," with departments for Army, Navy and Air?



And do away entirely with the Secretaries of Agriculture, Commerce and Labor?

And not have any new Secretary of Health and Education?

Note: Harold C. Kessinger is a Republican State Senator representing the fourteenth Illinois Senatorial District.

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IN MEMORIAM  
ROBERT LYMAN MORRIS  
1877-1929

In the noon and zenith of his career, in the flush and the glory of success, Robert Lyman Morris, familiarly called "Bob", passed on May 13th, 1929, from the shore of activities to the realms of silence borne by the mysterious tide that ebbs but never flows.

A life of usefulness has been cut short in its prime by the all-wise ruling power and supreme Being whose decrees at times appear mysterious and almost inexplicable to mortal minds. What a deep regret to his friends that the finger of death silenced the lips of a man whose experience and work has proven its worth in this community.

All those who came in contact with him in his life work were impressed with the breadth of his views and his devotion to his task. Like many other men of fine mind and high attainments, he was modest for himself and keenly appreciative of the opinions and work of others. His ideals were always high ideals and his aims were always large aims. As time passes on there will continue to live our pleasant association with him our feeling of love as we miss his genial smile and presence.

His life was honorable and his service true. He was beloved and highly esteemed by all his associates and the loss of his unselfish and manly personality is a grievous one to us all.

The above resolution was passed by the Decatur and Macon County Medical Society.

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THE SAMUEL D. GROSS PRIZE

FIFTEEN HUNDRED DOLLARS

Essays will be received in competition for the prize until January 1, 1930

The conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages,

octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 19 S. 22d St., Philadelphia," on or before January 1, 1930.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

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PRIZES AT ANNUAL MEETING

One of the enjoyable parts of the entertainment arranged for the visiting doctors, at annual meeting of the Illinois State Medical Society, was the driving and pitching contest on the Michell Farm Links.

The winning contestants have been sending in letters of appreciation for this portion of the entertainment. The prize winners are as follows:

DRIVING CONTEST

First Prize—Dr. R. C. Berry, Livingston, Ill. Driver and brassie.

Second Prize—Dr. M. S. Griffith, Galesburg, Ill. Twelve Dunlop balls.

Third Prize—Dr. P. J. McDermott, Kewanee, Ill. Six Dunlop balls.

Fourth Prize—Dr. O. D. Willstead, Chatsworth, Ill. Four Dunlop balls.

Fifth Prize—Dr. O. F. Shulian, Quincy, Ill. Two Dunlop balls.

PITCHING CONTEST

First Prize—Dr. G. T. Love, Wenona, Ill. Set of six iron clubs.

Second Prize—Dr. F. M. Hagans, Lincoln, Ill. Twelve Dunlop balls.

Third Prize—Dr. O. E. Fink, Danville, Ill. Six Dunlop balls.

Fourth Prize—Dr. R. R. Ferguson, Chicago, Ill. Four Dunlop balls.

Fifth Prize—Dr. C. A. Buswell, Chicago, Ill. Two Dunlop balls.

## THESE BILLS WERE OF INTEREST TO THE ILLINOIS STATE MEDICAL SOCIETY

H. B. 22—Creating commission to supervise milk industry. Defeated.

H. B. 35—To establish public schools for deaf and blind children. Passed.

H. B. 45—To permit ill and physically disabled citizens to vote. (The danger of an honest doctor's affidavit being attacked was obvious.) Defeated.

H. B. 48—Permits counties (if carried by referendum) to increase tax for county tuberculosis sanitarium from one to one and one half mills on the dollar. Passed.

H. B. 49—To license shippers of milk providing for revocation if health provisions contained therein are violated. (Such regulations should be applicable to distributors.) Defeated.

H. B. 69—Provides for sexual sterilization of mental defectives. Defeated.

H. B. 90—Appropriates \$100,000 for infirmary for ex-service men at Elgin State Hospital. Passed.

H. B. 98—An unnecessary amendment to Workmen's Compensation law. Defeated.

H. B. 99—Provides additional hospital facilities for ex-service men at State Hospital at Jacksonville. Passed.

H. B. 134—Authorizing counties to appoint boards of health (a much needed measure but still misunderstood by certain leaders in the legislature. More education is needed.) Withdrawn.

H. B. 135—The sanatology bill, needed seventy-seven votes received thirty. Defeated.

H. B. 147—Regulatory measure regarding disposal of property belonging to idiots, lunatics, drunkards, spendthrifts. Defeated.

H. B. 157—Amends pharmacy act to prohibit sale of Loco Weed, Cannabis Indica, Marihuana, Daturas, Indian Hemp, Mexican Hashish, all habit forming drugs (a laudatory measure). Passed.

H. B. 190—To permit physicians on hospital staffs to serve on medical examining board of State (withdrawn in favor Senate Bill 140). Withdrawn.

H. B. 234—A measure to require a certificate of convenience from Commerce Commission for milk distribution including that commodity as a public utility. Defeated.

H. B. 251—Another sexual sterilization measure. Defeated.

H. B. 261—Amends Mother's Pension Act. Defeated.

H. B. 266—Amends Pure Food Act denying use of saccharine, etc. Defeated.

H. B. 320—Amends Workmen's Compensation Act to include junk dealers and to fix compensation for loss of hearing. Defeated.

H. B. 328—A liberalizing amendment to Workmen's Compensation Act. Defeated.

H. B. 342—Amending Occupational Disease Act to include "ocher," thus making it obligatory for manufacturers to furnish working clothing for employees. Defeated.

H. B. 343—The Chiropractic Bill. Defeated.

H. B. 364—The administration of estates regarding expenses of last illness and hospital care. Defeated.

H. B. 376—Prohibiting exchange of certain bakery and food stuffs. Defeated.

H. B. 385—Proper disposal of estates of idiots, lunatics, etc. Passed.

H. B. 407—A barber bill (certain provisions bordered on treatment of skin diseases). Passed.

H. B. 428—Appropriating \$2,020 for deficiency in teaching deaf pupils. Passed.

H. B. 433—For reimbursement for loss of animals dying of rabies. Defeated.

H. B. 461—Relative to transfer of feeble-minded and insane patients from one hospital to another. Defeated.

H. B. 462—Re State's responsibility for clothing of feeble-minded. Defeated.

H. B. 468—Proposition of licensing Funeral Directors. Defeated.

H. B. 492—Drugless Science Act. Defeated.

H. B. 517—Eradication of bovine tuberculosis. Passed.

H. B. 533—To include workers with ammonia and carbonic acid gas in steam boiler explosion act. Defeated.

H. B. 560—Licensing professional correspondence schools. Defeated.

H. B. 561—Relative school dentists. Passed.

H. B. 565—Amendment to pharmacy act. Defeated.

H. B. 575—Control of Canada Thistles. Defeated.

H. B. 593—Relative commitment of lunatics in Veterans' Hospital. Defeated.

H. B. 632—A mail order optometry measure of the lowest type. Defeated.

H. B. 708—Amendment to Dental Practice Act. Passed.

H. B. 722—Repeal of barber act. Defeated.

S. B. 17—Eradication of obnoxious weeds. Passed.

S. B. 25—Segregation of mental defective with mental propensities (a moron bill). Defeated.

S. B. 40—Increasing hospital facilities for ex-service men. Passed.

S. B. 102—An objectionable narcotic bill. Defeated.

S. B. 140—To enable physicians who are serving on hospital staffs to be eligible as an examiner for State Medical Board. Passed.

S. B. 174—Provides for proper sewage disposal in interest to public health. Passed.

S. B. 175—To prevent immediate cremation of dead human bodies unless from contagious disease. Defeated.

S. B. 221—The antivivisection bill. Defeated.

S. B. 229—To indemnify for slaughtered tubercular cattle. Defeated.

S. B. 231—To prohibit corporations from practicing medicine (Legislative Committee of I. M. S. withheld consideration on account of Dr. Schmidt controversy, and realizing the inevitable defeat of the measure this session). Defeated.

S. B. 240—A carelessly drawn drastic narcotic bill. Defeated.



- S. B. 241—Similar to 240. Defeated.  
 S. B. 244—Helpful amendments to Child Labor Law. Passed.  
 S. B. 259—Same as 175. Defeated.  
 S. B. 261—Increasing certain coroner's fees including autopsies. Defeated.  
 S. B. 296—Re-registering funeral directors. Defeated.  
 S. B. 313—Bettering sanitation of public swimming pools. Passed.  
 S. B. 347—Regulating correspondence schools, excludes medical teaching. Passed.  
 S. B. 363—Regulating funds expended for blind relief and designating oculists shall be examiners. Passed.  
 S. B. 364—To prevent exchange of bakery products. Defeated.  
 S. B. 389—Transfer from one hospital to another of women insane patients. Passed.  
 S. B. 390—Similar in function to S. B. 389. Passed.  
 S. B. 398—Penalizing physician if failure to report treatment of gunshot wounds—discriminatory and unnecessary. Defeated.  
 S. B. 405—To transfer certain criminals to Department of Welfare for mental study. Defeated.  
 S. B. 437—Liberalizing Beauty Culture Act. Defeated.  
 S. B. 438—Increasing hours of study for beauty culturists. Defeated.  
 S. B. 460—A radical increase in appropriation for Mothers' Pensions. Defeated.  
 S. B. 491—Amending act regulating cold storage of certain articles of food. Defeated.  
 H. B. 4—To enable the sick to vote. Defeated.  
 H. B. 12—Old Age Pension Bill. Defeated.  
 H. B. 89—Relative hospital and physicians bills. Defeated.  
 H. B. 92—Women jury bill. (Would have been defeated with referendum). Passed.  
 H. B. 139—A plumber's regulation bill. Defeated.  
 H. B. 200—Another old age pension bill. Defeated.  
 H. B. 204—Inspection of certain mines providing for health and safety of employees. Defeated.  
 H. B. 231—Amending sanitary district act among many other additions to ascertain physical fitness of certain employes. Defeated.  
 H. B. 260—Stream pollution act. Defeated.  
 H. B. 414—Women's eight hour law—original bill did not exempt nurses—present one did not exempt hospital employees. Defeated.  
 H. B. 418—Expenses for two years—amount for antitoxin increased. Passed.  
 H. B. 421—Includes appropriation for schools for crippled children. Passed.  
 H. B. 525—Amends Workmen's Compensation Act, changes amount of rewards, requires examining physician to report both to employer and employee. Passed.  
 H. B. 579—Creates office of Chief Veterinarian at \$4,200 per annum. Passed.  
 S. B. 39—Personal Income Tax. Defeated.  
 S. B. 245—Anti-cigarette law. Defeated.  
 S. B. 269—Referred to as a public health measure by directing one day of rest in seven. Defeated.

S. B. 288—Permits court physician in Municipal Court of Chicago to test or treat a mental condition of any person. Defeated.

S. B. 478—Provides certain safety amendments to present act for mill workers. Passed.

S. B. 501—Provides adequate supervision for fresh air in mines. Defeated.

## Correspondence

### A CORRECTION

Chicago, Ill., June 15, 1929.

*To the Editor:*

In my article on "Clinical Aspects of Ovarian Transplantation with Report of Forty-Four Cases", which appeared in the *ILLINOIS MEDICAL JOURNAL*, November, 1928, reference was made to the brilliant experimental work of Professor A. Lipschütz, head of the Physiologic Institute of the University of Concepcion, Chile, South America.

The article refers to "cases of Professor Lipschütz. These are to be construed as experimental cases, not on humans but on guinea pigs, upon which Professor Lipschütz has been working.

I would also appreciate it if you will call attention to the fact that the last four lines, relating to the heterogenous ovarian grafts, are not those of Professor Lipschütz, but only connected with the quotation of his work by an error in printing.

DR. MAX THOREK.

### IT IS THE DUTY OF THE COMMUNITY RATHER THAN THE MEDICAL PROFESSION TO CARE FOR THOSE NEEDING GRATUITOUS OR SEMI- GRATUITOUS SERVICE

Rockford, Illinois, May 14, 1929.

*To the Editor:*

Three-fourths of the patients who present themselves at a venereal clinic for treatment because they are unable to pay regular medical fees, have spent ten times that amount in actual cash in the process of acquiring the disease from which they are suffering. Why should the medical profession carry the load of caring for these diseases at reduced rates. Granted that as a matter of public policy it is a necessity to care for them, then why is it not a duty, if the community as a whole benefits, for the community as



a whole, equally through the public taxes to pay for these benefits, and maintain an institution for this purpose? Why load all the expense on the medical profession?

If a man has no food, are the restaurant owners undesirable citizens, because they do not feed four citizens free, for every six that pay? If a man has no clothing are the clothing stores supposed to furnish four free suits for every six they sell for cash, or—be classified as a grafter? Do hotels furnish rooms for the indigent free of charge or flatowners donate free flats to the poor?

Food, clothing, a home, are all as much necessities of life as are medical attention.

Take any community in the middle west, and take into consideration the amount invested in any education, the energy expended, the hours per day a doctor has to work, where are the physical evidences of all this material wealth the medical profession has been acquiring? Does the village, town, or city doctor live in a better home, than the average manufacturer, merchant or lawyer? Are his children or wife dressed better? Is the "Gold Coast" in our larger cities so lined with doctors' residences that no one else can build a home in these localities?

Is the Lake Shore Drive solely owned by doctors or Lake Forest solely inhabited by them?

Why is it that the great middle class is unable to pay their medical bills? The great middle class is buying an auto at \$50.00 a month, and a \$175.00 radio, and a few more "necessities" that come in ahead of their medical bills. How many times a month does the average doctor hear that excuse? "We have just bought an auto or radio, and can not pay this month." If these people are not getting enough wages to live on, why can not "big business" be prevailed on to raise wages a little so that they can pay their way? Every type of "big business" is interested in "Community Funds." The larger the community fund donated by the public the less they have to pay in taxes for public relief.

Pages and chapters have been written by various authorities on the lack of medical attention in rural communities and various remedies suggested by men who never practiced a day in a rural community. There is just one reason why a rural community does not have a doctor. The people will not pay him. Physicians so far

have not solved the question of living in a rustic community without an income. Congress so far has paid no attention to us when an original investment of \$300.00 jumps to \$500.00, and drops back to only \$300.00 on post war prices.

The average physician throughout the United States today does not have as large an income as the average owner of a plumber's shop in spite of long hours, responsibility, and his investment in an education.

Horace Dunn.

#### WANTED: BACK NUMBERS OF THE ILLINOIS MEDICAL JOURNAL

The Bureau of Science Library, Department of Agricultural and Natural Resources, Manila, Philippine Islands, desires back numbers of the JOURNAL as follows:

Vol. 26—November, 1914.

Vol. 27—January, 1915.

Vol. 31—March and April, 1917.

Anyone having copy of July, 1914, Journal (Vol. XXVI, No. 1) is requested to advise the managing editor of terms for sale.

#### WANTED: TRANSACTIONS OF THE ILLINOIS STATE MEDICAL SOCIETY

Northwestern University Medical School desires transactions of the Illinois State Medical Society as follows:

1st-22nd, years 1850 to 1872, both inclusive.

Note: Inasmuch as back numbers of the JOURNAL as well as volumes of the transactions will in all likelihood come from several sources, we request that the volumes be forwarded directly to the editor, 185 N. Wabash Avenue, Chicago, where the collection can be checked to see that the orders have been fully taken care of.

#### AMERICAN PUBLIC HEALTH ASSOCIATION SEDGWICK MEDAL AWARD

370 Seventh Avenue, New York City

The American Public Health Association announces that the first award of the Sedgwick Memorial Medal will be considered in 1929. This award was established in honor of the late professor William Thompson Sedgwick, a former President of the American Public Health Association. The fund which provides the medal was raised by popular subscription from Professor Sedgwick's former students and friends. It is to be awarded for distinguished service in public health.

Except for the fact that it is limited to the recognition of service in the field of public health there is no restriction as to the special line of service that will be considered. Administration, research, education, technical service and all other specialties in the public health profession will receive equal consideration. No limitations as to age, sex or residence have been fixed, though only candidates who are nationals of the coun-

tries in the American Public Health Association,—at present, United States, Canada, Cuba and Mexico are eligible.

The committee of the Association which has this matter in charge is composed of:

Mr. Homes N. Calver, Secretary

Dr. Charles V. Chapin

Dr. Lee K. Frankel

Professor E. O. Jordan

Dr. George W. McCoy

Dr. M. P. Ravenel

Dr. M. J. Rosenau, Chairman

Mr. Robert Spurr Weston

The committee will not consider direct applications from candidates, but asks for nominations, giving the information suggested in the accompanying form. Nominations should be addressed to the Secretary, Homer N. Calver, 370 Seventh Avenue, New York, N. Y., and should include the following:

Name of the proposed candidate

Residence address

Business address

Age

Country of which the candidate is a citizen

Degrees held, date received and institutions from which received

Principal public health positions held

A brief description of the distinguished service performed because of which the candidate is recommended for consideration. This should include information as to when and where the work was done, the name of the organization or institution, if any, under whose auspices or in whose service the candidate worked, an estimation of the direct or indirect effect of the work measured in terms of life-saving or benefit to humanity. Descriptive articles, reports or similar data published or unpublished will be helpful to the committee. To be considered, the service must have been actually performed and not be merely a plan or suggestion.

Anonymous recommendations will not be considered and the committee reserves the right to refrain from making an award this year.

#### NEW LAWS FOR DRIVERS OF HUMAN MOTORS

Pull your machine up alongside a filling station regularly three times a day and put into it high-test fuel, such as leafy green vegetables, fresh fruit, milk, dark bread and real butter. Do not use substitutes—you wouldn't do it with a limousine. This high-test fuel is remarkable in that it builds your automobile as well as puts pep in your motor.

Run your human automobile into the garage each night for eight hours of rest. Remember to turn on the fan by opening windows and getting plenty of fresh air. This will prevent flat tires.

Run your automobile body onto the wash rack daily.

Keep the chewing apparatus clean. Brush it morning and night.

Give your human car plenty of water to prevent a dry radiator.

Visit expert mechanics regularly (the doctor once a year and the dentist at least twice a year.) They can help you overhaul your machine and discover a little knock in the engine before you even hear it.

Put a self-starter on your flesh-and-blood vehicle—that is, remember the main facts about putting pep in your motor every day.

—Exchange.

#### MEDICAL ETIQUETTE

"I say, without the slightest fear that I may be overstating my case, that there is no profession which is more exposed to the temptation to forget honor, humanity and kindness than the medical profession, and none in which the exploitation of human suffering is easier. Yet there is none in which the temptation is so triumphantly withstood. Let this be remembered by the public when they feel inclined to sneer at medical ediquette and to speak of it as if it were a code for maintaining selfishness and enrichment. Medical etiquette is the salvation of the patient. It is the one thing which stands between him and the dangers of exploitation. It is what makes him his sufferings hold the dominant part in the dread dramas of pathology."—John St. Loe Strachey, *The River of Life*.

#### ONE CIGAR A DAY ALMOST KILLED HIM

"Medicine won't help you any," the doctor told the patient. "What you need is a complete rest and a change of living. Get away to some quiet country place for a month. Go to bed early, eat more roast beef, drink plenty of good rich milk, and smoke just one good cigar a day."

A month later the patient walked into the doctor's office. He looked like a new man and the doctor told him so.

"Yes, Doctor, your advice certainly did the business. I went to bed early and did all the other things you told me. But say, Doctor, that one cigar a day almost killed me at first. It's no joke starting to smoke at my age."—*Am. Mutual Mag.*

#### THYROID GLAND IN INFECTIONS

All the data presented by W. H. Cole and N. A. Womack, St. Louis (*Journal A. M. A.*, April 21, 1928), point strongly to the fact that the thyroid gland takes an active part in the mechanisms combating diseases of the body in general. Especially does this seem true in acute infections and fevers. Since the iodine content of the gland is reduced so markedly during acute infectious processes experimentally, it seems logically to assume, that the administration of iodine to patients with infectious processes, especially of the acute type, might be beneficial.



## Original Articles

### SOME PRESENT DANGERS TO MEDICINE\*

EDWARD H. OCHSNER, M.D., B.S., F.A.C.S.

Attending Surgeon, Augustana Hospital

CHICAGO

Next to the stability of government, honesty of administration and the general intelligence of the people, the welfare of the nation depends more upon the quality of medical service which is rendered to the people than upon any other one thing.

The longevity, health, efficiency and happiness of the people depends more upon the integrity, ability and industry of its medical profession than upon anything else.

The allied professions of medicine, dentistry and pharmacy are today giving the American people the best all-around medical service that any nation has ever had in the history of the world.

If the above three postulates are true, and I firmly believe they are, then it is the plain duty of every physician to see to it that the present standard of medical efficiency is maintained, and the part of wisdom of every layman to encourage the regular medical profession so that it can maintain this standard and gradually make further improvements in order that the citizens of this country may enjoy the greatest possible degree of health, and it is the plain logical duty of every red-blooded medical man who is loyal to his country to fight to the last ditch to prevent the socialization of medicine or its control by lay monopolists.

Medicine is divided into three parts—science, art and economics. The science of medicine corresponds to the foundation of a building, the art to the main structure, and the economics to the roof. An architectural structure consisting of a fine building and an excellent roof will not endure long unless the foundation upon which it rests is sound and secure, and one with a splendid foundation and an excellent building will deteriorate rapidly if the roof is defective.

For centuries medicine was submerged in superstition. Then came the age of empiricism when experience raised the first structure of the

art of medicine, a structure which had gradually become more and more perfect. Today we have well established scientific facts forming a sound foundation for the art, but the stability of medicine and its future progress are seriously jeopardized because the economics of medicine have been sadly neglected. Medicine today is a structure with a defective roof.

For short periods of time other factors may be operative, but in the long run the economic status of the medical profession depends upon the service it renders to society. If its service degenerates, the financial reward will ultimately decrease, and conversely, if its legitimate financial rewards are unduly curtailed, its service to society will deteriorate. The two are interdependent—neither can truly prosper alone, hence the imperative need of the symmetrical development of all of the three basic divisions of medicine.

The purpose of the study of economics is to safeguard and promote the material resources of a nation or a group within a nation. The study of medical economics has for its primary object the safeguarding and promoting of the material welfare of the medical profession and for its secondary object the promoting of the general welfare of all the people.

When a young man spends twenty years of hard work preparing himself for the practice of medicine and then utterly fails in rendering suitable service to society in his chosen profession or making a decent living, it is a real human tragedy, and when this sort of thing happens to many hundred graduates every year, it is a great economic loss to society and the multiplication of human tragedies. I am firmly convinced that much of this could and should be avoided. I do not believe that the problem is a very difficult one. I believe the main phases of the problem could be satisfactorily solved without a great deal of difficulty if we would brush away the non-essentials and get at the heart of the matter. This problem will never be solved by theorists, swivel chair doctors, welfarers, philanthropists or other laymen with only a superficial knowledge of the problems involved in the practice of medicine. It can only be solved by medical men with personal knowledge of all of the phases of medical practice as well as wide experience in life's problems in general.

\*Read before the North Shore Branch of the Chicago Medical Society on May 7, 1929.



Without going into details, it seems to me that there are certain fundamental facts already known, which, if applied, would solve most of our economic problems, or stated conversely, there are certain practices and tendencies which endanger the future of medicine. The safe navigation of a ship depends in large measure upon the knowledge of the dangers which beset navigation in general. If we would safeguard the future of medicine we must do what the maritime nations do—set up light houses marking the capes, bars, rocks and shoals upon which medicine is likely to be wrecked.

Some of the main dangers to medicine as I see them are:

1. Lack of balance between the three divisions of medicine.
2. Misinformation of the true purpose of medical charity.
3. Misinformation as to the cost of being sick.
4. Misinformation as to the quality of medical service rendered to the man in moderate circumstances.
5. Misinformation as to qualification of the average medical man.
6. Lay and political domination and control of the practice of medicine.

#### MISINFORMATION OF THE TRUE PURPOSE OF MEDICAL CHARITY

The man who once accepts charity, particularly if it is not a case of dire necessity, is not quite as fine a man as he was before. He has lost something that nothing can replace. Many of the innumerable charitable organizations in existence are doing more and have done more to undermine character than can ever be evaluated; consequently, it is a serious question whether or not many of them have not actually done more harm than good.

War, pestilence or general disaster may reduce anyone of us to want and penury, and then there is no disgrace in accepting aid from our fellowmen, but under ordinary circumstances we have no moral right to that which we have not honestly earned. In giving we should be very careful to give only to make men better and not to make them worse. Just now we need in this world a little more pride and a great deal less vanity, more self-reliance, individuality, and independence.

It is far better to be a little hungry, a little cold or even a little sick physically than to have lost one's self-reliance and self-respect and to have become a human parasite. Parasitism is today the corroding canker of American life and nothing has fostered this more than unwise medical charity.

#### MISINFORMATION AS TO THE COST OF BEING SICK

The onus of the increased cost of being sick is being placed upon the shoulders of the medical profession most unjustly; instead it should be placed upon the hospitals, and the public in general, where it justly belongs. It is surprising how much misinformation a simple phrase may convey and how much mischief such misinformation can do. We have seen the phrase—"the increased cost of medical care" so often in print in recent years that most people have accepted it as expressing the truth, and yet nothing could be farther from the truth. I challenge anyone to produce convincing evidence that the cost of medical care has increased to the same degree as have other necessities of life since the purchasing power of the dollar has decreased. While there may be a few ultra specialistic quasi medical quacks who charge exorbitant fees, it is no more fair to blame the whole medical profession for their wrong doings than it would be to blame reputable bankers and brokers for the actions of those investment brokers who sell worthless stocks and bonds. No formula has ever been devised to keep the fool from squandering his money, and those who choose to go to unscrupulous ultra specialistic exploiters when they could go to honest, more competent members of the profession, have only themselves to blame if in the end they are fleeced. It is an ever recurring surprise to me how many of the extremely rich, particularly the newly rich, are constantly victimized by the "four-flushers" in medicine. Many newly rich individuals exhibit even less judgment in the choice of their medical advisors than does the average doctor in the selection of his investments. Some of them choose their medical adviser because he is a high priced doctor, others because he has some professional title, and again others because he happens to be the physician of the leader of the social group she is trying to break into.

One complaint which I have heard on several

occasions is to the effect that the professors of our medical colleges charge their private patients exorbitant fees. This abuse, if it is an abuse, must again be laid at the feet of the bungling of laymen, who meddle with medical matters without first thoroughly informing themselves. If a professor has to give half of his time, without compensation, to the charity wards of the hospital connected with the medical college, he must in order to live charge his private patients extra for his services. If lay trustees of medical colleges would pay their teaching staffs a living wage, they would have better teachers, and if laymen in general would choose their medical advisors on the basis of proved skill, knowledge and honesty, in place of professional titles, this practice would soon cease. I know one surgeon in this city who on three different occasions refused a full professorship in surgery in three different medical colleges and he said that he did this for the following reasons: That he could not afford to give his time, energy, skill, and knowledge to the medical college for nothing unless he then overcharged his private patients, a thing which he was not willing to do.

Let those who blame the medical profession for the increased cost of being sick ponder the following facts: Twenty-five years ago adequate hospital and nursing care were procurable in many of the Chicago hospitals for seven dollars a week or one dollar per day. Today, I doubt whether any hospital in the city gives the same quality of hospital and nursing service for less than twenty-one-dollars a week or three dollars per day. A private nurse twenty-five years ago cost thirty-five dollars a week—today, adequate private nursing service almost anywhere in Chicago costs one hundred nineteen dollars a week. If some of our philanthropists want to decrease the cost of being sick here is a splendid opportunity for their efforts, and if they do this they will not be continually barking up the wrong tree.

#### MISINFORMATION AS TO THE QUALITY OF MEDICAL SERVICE RENDERED TO THE MAN IN MODERATE CIRCUMSTANCES

Another common assertion is that the man with a moderate income is not getting adequate medical service. This statement, I believe, is essentially untrue. I believe that the man of moderate

income is on the average getting better medical service than the very poor and the very rich. Probably not so much paraphernalia is employed in treatment, nor does he receive so many fancy and unnecessary laboratory tests and examinations, but he is getting the essentials to make him well or keep him well. Why is it that when a man of moderate circumstances gets seriously ill he usually makes the grade, while when a prominent man gets seriously ill he usually passes on? One reason is that the latter usually has too many doctors, too many time-consuming consultations and exhausting examinations. I could, if space permitted, cite some very interesting and convincing case histories in this connection.

Show and style and elaborateness do not necessarily indicate efficiency. While there is a minimum in physical equipment below which one can not safely go and still be efficient, there is also a maximum beyond which it is unsafe to go because it clutters up things—because it obscures the issue by diverting the attention from the essentials to the non-essentials. Except in the very unusually obscure case, there is no occasion for innumerable expensive laboratory tests and investigations. The old Swiss proverb—"too little and too much are equally bad," is truly applicable here.

#### MISINFORMATION AS TO THE QUALIFICATIONS OF THE AVERAGE MEDICAL MAN

Another statement which one often hears is that the average practitioner of medicine is incompetent. This statement again is not supported by the facts. No other group has rendered a greater service to society, for it has given good health and length of life, two of the greatest blessings man can possess, to an ever increasing number of men and women. Few departments of human knowledge have made the marvelous strides that medicine has in the last fifty years. This would have been impossible if the average practitioner of medicine had been incompetent. It has been my privilege to know rather intimately a great variety of men in all classes of society and all walks of life. I know of no group that averages higher in general intelligence, industry, integrity and efficiency. I have had an opportunity to observe the work of all classes of physicians, literally hundreds of them, and I be-



lieve that the general practitioner of medicine, man for man, averages quite as high in these essential qualities of manhood and citizenship as do the specialists.

#### LAY AND POLITICAL DOMINATION AND CONTROL OF THE PRACTICE OF MEDICINE

This is today the most vital problem of all those considered. After all is said and done, experience is not only the greatest teacher but the most dependable guide. Let us see what lay and political domination and control have accomplished up to the present time. This will give us a fair index as to what we may expect of it in the future and what will happen if the present tendency to lay encroachment is not halted. Let us start with a consideration of our local institutions. Up to the early eighties, the medical care of patients in our county hospital was practically entirely under the control of the faculties of the then two existing medical colleges. One day one of the attending surgeons grafted a piece of chicken skin on a varicose ulcer. Strange as it may seem it healed in position. The patient and his friends made such a row that the Board of County Commissioners dismissed the surgeon. The remaining members of the attending staff came to his support and threatened to resign unless he was reinstated. He was not reinstated, they resigned, and the Commissioners appointed their political friends on the staff. This was the beginning of lay political control of the county hospital.

While the county hospital has always been a wonderful school for the training of medical men, some of the most prominent men of this country having served their internship there, very little permanent scientific value has come out of the county hospital since the time of the skin grafting episode.

It was my privilege to serve as interne under the late Dr. John B. Murphy for a period of six months. I remember an incident which occurred during my three months' junior service and which in large measure explains why little of scientific value has come out of the county hospital. When Dr. Murphy did difficult operations he brought his own instruments. One morning when some of these were lost, he was very much incensed. He went to the warden and demanded in language such as only Dr. Murphy was

capable of that the hospital supply suitable instruments. The warden promised everything, but the instruments had not yet arrived one year later when I was on Dr. Murphy's senior service. In politically dominated institutions, one of two things almost invariably happens. Either the competent men are worn out with "red tape" and delay until they give up in despair and leave the service, or political favorites get the key positions. Both are destructive of medical progress. Just one further illustration to show how these things usually work out in the county hospital and why so little of scientific value comes from it. Some forty years ago the staff of the Cook County hospital decided that the County Commissioners ought to provide a medical statistician in order that medical statistics could be published and back histories could be traced for study and investigation. The first Registrar was a thoroughly competent, scientific medical man who held the position only a few years. Then a political doctor was appointed who spent most of his time building political fences and rendered no useful service to the hospital or the community.

What about our state institutions? In the early days some splendid work was done in our schools for the deaf and in the establishment of the cottage plan for the insane at Kankakee. The latter was one of the first institutions of its kind in the world and was the child of the fertile brain of Dr. Richard Dewey then superintendent at Kankakee. Individuals and committees interested in the care of the insane came from all over the world to inspect and study the physical plant. A short time after Governor Altgeld was inaugurated as governor, he discharged Dr. Dewey, one of the greatest psychiatrists this country has yet produced, and put in his place a man who was intoxicated most of the time. Little of value has come out of state institutions since Dr. Dewey left. The state has under its care over 20,000 wards, and medical service to these wards is rarely excellent or even good, occasionally mediocre, and usually deplorable. In our insane asylums a physician is supposed to take care of between three and four hundred patients, while no man can efficiently care for more than one hundred and fifty. In our homes for the feeble-minded and in our penitentiaries the condition is no better, surely a condition of



which every citizen of Illinois should be thoroughly ashamed.

The national government has had under its medical care over one per cent of its citizens ever since its establishment one hundred and fifty-three years ago. I believe I am well within the facts when I say that nothing new or important in treatment has been developed by the medical staff of the army and navy or the public health service in all this time. Several years ago when I visited a large army post, one of the captains of the service told me that the reason the service was mediocre was because they had to spend so much of their time on paper work, and because often when a man became particularly interested in a problem he might be transferred on a moment's notice without regard to the stage of his investigation, and because advancement was according to seniority and not according to efficient service.

In those European nations where lay domination and political control have become the most pronounced, medical service has steadily degenerated as is best illustrated by the increase in loss of time from sickness since medical men have lost control of their own affairs—also by the greater amount of sickness among the workers of these countries as compared with the workers of America, and finally the relatively higher death rate. Thus, in Germany, the average number of days of sickness per insured workman was 5.9 days per year in 1885, while in 1913 it had increased at 9.19. In Austria, the increase from 1890 to 1913 was from 8 to 9.45 days. In the United States, however, where up to the present time medicine has been relatively free from lay domination and control, the average loss from sickness for the American workman is 6.5 days. From this it will be seen that the loss of time from sickness of the German and Austrian workman is 43 per cent higher than that of the American workman. The mortality figures are equally striking and convincing. The annual death rate in Germany was 15.6 per thousand population, Austria 20.5 and in Hungary 23.3. These three countries have for years had their medical services controlled and directed by laymen. In Australia the death rate per thousand population was 11.2, in New Zealand 8.9, Sweden 14.2, and the United States, in spite of its large colored population where the death rate is very

high, 13.5. In the last named four countries the people were taken care of by private physicians. These figures show clearly how much less efficient medical service is when controlled by laymen than when controlled by doctors themselves, the inevitable results which come from uncertainties of tenure of office, loss of independence and political favoritism.

What would the captains of industry say if the medical profession attempted to meddle with their affairs? Frankly, I think the medical profession has solved its problems more nearly and more satisfactorily than the industrialists. So far the medical profession has remained strictly neutral in the struggle between capital and labor. Should capital force the medical profession to align itself with labor, it might perchance prepare for itself the same kind of a bed of roses that Commodore Vanderbilt prepared for the railroads by his expression—"the public be damned," or that "Divine Rights" Bear prepared for the coal industries by his idiotic statement that the mine owners control the mines by divine right.

It behooves society in general to ponder well before it destroys the professional and economic independence of the medical profession.

Medicine achieved its greatest triumphs and made its greatest progress during the three decades from 1880 to 1910 during a period when medical men were least hampered by political and lay domination and control. I am thoroughly convinced that unless medicine retrieves its lost ground, and unless medical men again get substantial control of their own affairs, medicine has reached the zenith of its glory and the acme of its usefulness to society. If philanthropically inclined capitalists really want to do something for society and help the man in moderate circumstances, I would most earnestly commend the following program to them for their serious consideration, a program which if followed out would give the average citizen more dollars to spend and give him more for his dollars:

1. Devise means and methods of reducing the great army of human parasites which prey upon the average citizen. In the past, particularly in the recent past, the same philanthropists have actually favored and abetted many of these parasites.

2. Reduce the number of public officials and public employees and thus reduce the heavy burden of

direct and indirect taxes now crushing the average citizen.

3. Devise means and methods and provide funds for sending all grafting politicians and all habitual criminals who now prey upon the public to prison and keep the latter there.

4. Put out of business all the high pressure salesmen who sell worthless stocks and bonds and other worthless securities to people with small incomes.

5. Put out of business all of the fake charity organizations whose principal business is to furnish its promoters with lucrative incomes and whose secondary effect is the pauperization of the public.

6. Let those philanthropists who control great industries reduce their fortunes by selling their products at a smaller profit and by paying their employes a sufficient wage so that in ordinary cases of illness they will be able to consult and employ competent practitioners of medicine of their own choice, and pay them out of their own earnings.

7. Establish endowment funds to provide hospital care for persons of moderate means who happen to have an unusually protracted illness.

American medicine is facing a crisis today such as it has not faced in our day and generation, and probably not in its history, a crisis towards which many of us have realized that it was slowly drifting. The question today is—shall medicine continue in the "straight and narrow path" which it has followed throughout the centuries, or shall it deviate therefrom and permit lay domination and control to direct it into a blind alley? There is no other group of men who have persistently maintained such high ideals both in theory and in practice. A concerted effort is being made by misinformed laymen to destroy these ideals. One of the ideals is that medical men shall not advertise either directly or indirectly because it would give the unscrupulous charlatan an unfair advantage over the medical man with real scientific attainments and because in the end the public would have to pay for the advertising. As things have been in the past the most efficient have gradually forged to the front and the less efficient and less scrupulous have been left behind in the race. While advertising a commodity is perfectly legitimate, because in the end the quality of goods will tell, and no amount of advertising can indefinitely sell a poor quality of goods. In medicine the process of eliminating the unscrupulous and incompetent medical advertiser would take so long that in the meantime he could do endless mischief.

I am a firm believer in the doctrine that right always triumphs, provided only that it is defended with the same vigor, intelligence, determination and persistence with which wrong is usually championed. The medical profession being in the right will be able to defeat those who are unwittingly or selfishly working for the socialization of medicine, state medicine and monopoly controlled medicine, all of which are identical in their effect. Any one of these is sure to ultimately supplant the high quality of medical service now enjoyed by the people of this country and substitute therefor cheap, standardized, mediocre service such as is now quite generally dispensed in our publicly controlled institutions. Besides I wonder whether it has ever occurred to these same philanthropic capitalists that it will surely be the entering wedge to socialism as it would have been in Germany had it not been for the intervention of the world war. The dream of the socialist and up-lifter is an omnipotent state. What they will really get if they ever succeed is a lot of omnipotent politicians.

The main difference between an ultra intellectual and a politician is that the ultra intellectual is strong in the head and weak in the adrenals, while the politician is weak in the head and strong in the adrenals. Let us prove to the well-farers, the bureaucrats and the capitalists who are making such a strenuous fight to enslave medical men that the medical profession is not only strong in the head but strong in the adrenals. This can only be accomplished by offering a united front and adopting the slogan—"no surrender."

The capitalists and industrialists who are trying to compel the medical profession to adopt the same methods that they themselves employ in their factories where standardized goods of mediocre quality are produced by mass production, fail to realize that there is more to the practice of medicine and surgery than a mere knowledge of the action of drugs and a certain skill in the handling of surgical instruments. They are as wrong in their point of view as he who thinks that all that is worth while in life is money and what money will buy. The successful practice of medicine depends fully as much upon the personal human sympathy which exists between the physician and his patients as



upon the scientific problems involved, and if you destroy this human relation and commercialize and wholesalize the practice of medicine you will not only drive out of the profession a large portion of the big whole-souled humane men who have made medicine what it is today but deter others of the same type from entering the profession.

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### MEDICAL LEADERSHIP IN SCHOOL MEDICAL INSPECTION AND HEALTH SERVICE\*

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School Health Service began in this country in Boston in 1894. It was started by Dr. Durgin, then the distinguished chairman of the Boston Board of Health, who placed physicians in the schools in that city to control an outbreak of diphtheria. The results were so satisfactory that physicians were thereafter kept in schools to control other communicable diseases. Enduring credit is due to the pioneer of school health service in this country for his foresight of its need, and for his wisdom in placing it under medical leadership.

In 1895 Chicago adopted the Boston plan somewhat modified. New York City did likewise in 1897 and Philadelphia in 1898. After a few years of such and similar systems, which rapidly increased in number, the program was extended to discover physical defects among school children. This plan proved equally or even more successful than that for the control of communicable diseases.

Next in order of development came the treatment or correction of physical defects. This to quite an extent was also successful from the start. As the services of the system increased and its purposes broadened it became more and more evident that much could and should be done for the prevention of existing defects, physical and mental.

*Present Scope of School Health Service.* From its initial single purpose, the control of diphtheria, school health service, in thirty-four years

in this country, has so broadened its field and so extended its purposes that today when best organized and most efficiently administered, it seeks to deal with the whole child as a health unit and with his environmental influences at school. In doing so it has become a comprehensive system of modern preventive medicine applied by physicians and others to both pupil and teacher. It embraces the conservation and improvement of the mental and physical fitness of all teachers and of all pupils and the establishment and maintenance of proper sanitary conditions of school buildings and premises. In many sections no phase of health work has created greater interest, especially parental, or grown more rapidly in public favor. Parents are more and more looking to school authorities to safeguard the health of their children. They are beginning to expect and to demand efficiency in the service. Its expansion has been so rapid, its opportunities so great, its problems so many and complex, its participants, often volunteer, so numerous, that its safe guidance under proper medical leadership has often been difficult, or even threatened.

*Relation of the Physician to School Health Service.* From its beginning the physician has occupied a leading position in the development and administration of school health service. At first he alone rendered the service. As its scope broadened his duties rapidly increased. Today in a well organized system we find him assisted by the dentist, the nurse, the hygienist, the nutritionist, the physical educator, the teacher, the parent, the pupil, the school, the community and many other agencies.

In performing his duties, we find the efficient school physician endeavoring to so coordinate all of these interrelated and interdependent agencies that each shall be of assistance to the others, that the best result may be accomplished for all. We find him trying to so mobilize and utilize the medical and dental professions, hospitals, dispensaries, etc., that all shall unite for health promotion for the community.

We find him a coworker with the medical and dental professions, a contributor to rather than a competitor with them.

Though he has accomplished much his task in many ways has not been an easy one. Too often

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he finds himself poorly supported or even opposed by the medical profession, the school authorities or others who could and should greatly assist him. Many indeed are his problems.

A free consideration of some of these perplexing problems, the successful adjustment of which by the profession would do much to insure better medical leadership and greater efficiency in school health service, will in part be the purpose of this paper. In doing this stress will be laid upon the physician around whom every successful health program must be constructed and to whom we must look for its proper guidance for greater efficiency.

*Medical Leadership for Better Compensation.*

Physicians should take the lead in demanding reasonable compensation for the services they render as school medical inspectors. Much of the inefficiency in the work is due to inadequate compensation. Too often we find the cheapest and not the best doctor is employed as school physician. With few exceptions he makes the poorest school medical inspector. He rarely leads except in inefficiency. His inadequate compensation seems to justify him in rendering poor service which not only reflects discredit on him and on the medical profession, but invites public criticism of the system. Both he and the school authorities are at fault. Both should remember that health service to school children is a community's best investment, that it should be the best obtainable, and should be sufficiently paid to insure its success and to command public respect and confidence. This does not mean that the physician should place a high monetary value on such services but that he should expect and demand reasonable compensation, in return for which he should obligate himself to do his best to contribute to its success. It would be far better for the service and for all concerned to do less and do it better than to do more and do it poorly. By doing well that which we do, at fair compensation, more of the same kind of service would soon be demanded, with increasing efficiency.

*Medical Leadership on Boards of Education.*

More physicians should be sufficiently interested in the educational activities of their community to become identified either in an advisory capacity or as members of the Board of Education. In far too many instances this is not done.

Every board of education should have a physician actively interested in health as one of its members. Such a representative of the medical profession could do much to aid in the formation, adoption and administration of a rational health program for the children and teachers of the community. He could explain to the board the value and necessity of the service, encourage sufficient funds for its organization and administration, aid in the selection of a competent staff for the work, and in many other ways contribute to its success.

*Medical Leadership in Normal Schools.* With few exceptions State Normal Schools seriously neglect proper instruction and training of pupil teachers in the essentials of personal and community health. This State failure to prepare future teachers to effectively participate in the school health service program is one of the most serious conditions with which we are still confronted. The average teacher knows but little of her own health and even less of how to observe health deviations among children. Comparatively few have ever enjoyed systematic health instruction or direction. In New York State where our system of medical inspection is fairly well organized, only one of the ten normal schools has a full-time physician associated with its health program. In several of our training schools the health service is directed by a nurse, while in others it is in charge of a physical trainer.

The system is radically wrong, contrary to recommendations made for twelve years for its rectification, and, as might be expected, unsuccessful.

Brighter prospects, however, are in store for us. We now have an Assistant Commissioner for Elementary Education and a Director of Normal Schools who appreciate the weakness of the present plan and who are ready to use their united influence to secure, within a reasonable time, a model system of medical inspection and health service in all of our normal schools. When such a program becomes effective we will in a few years be able to furnish to the class room, teachers qualified not only to teach health, but to practise it personally and among their pupils. No greater contribution than this could be made to the efficiency of school health service.

*Medical Leadership for the Classroom Teacher.*

Though the teacher is an indispensable factor in every successful program of school health service, the delegation to her of too great responsibility is attended with certain definite dangers, among which might be mentioned:

1. Her inability, from lack of training, to recognize serious defects needing immediate medical attention.

2. The acceptance of her findings by confiding parents as final, and the establishment of false confidence in the minds of pupils, parents, and the public in the reliability of the system.

3. The substitution of teacher's services for those of the physician where only the judgment of the latter should be accepted.

4. The creation of needless fear in the minds of normal children, on account of erroneous decisions of people untrained in health.

5. Permitting the teacher to do certain things for which she appreciates she is not qualified, and for which she would welcome medical direction.

6. The creation of just criticism by the physician that substitution for his service is being encouraged, because of which he loses his interest in the work.

These dangers to the system should be avoided. The teacher should not be expected to assume responsibilities which she neither seeks nor enjoys. She should work with the doctor and not in place of him.

*Medical Leadership in the Community.* In most communities the attitude of the local physicians in health affairs is reflected in the opinion of its people. As for generations people have looked to the medical profession for health restoration, so today they are looking for disease prevention and health guidance.

This indeed is as it should be. But are we always prepared and willing to give to them the advice or leadership they seek? Does it not sometimes happen that our clientele really get ahead of us in their ideas as to what should be needed for an up-to-date health program, applied either to themselves, their schools, or to the community? They are often asking for more progressive methods and for better health service. They have learned from some source that other communities enjoy such privileges and they see no reason why they should not be equally as fortunate. Community opinion is

generally the dominating force in any movement. Its guidance for health promotion should rest, as in the past, in the hands of the medical profession. Let us hope this responsibility will not be overlooked or neglected. Let us hope every community will have proper medical leadership which will insure to it safe guidance in all matters pertaining to health.

*Medical Leadership in our Legislatures.* Every physician should be personally interested in the statutory provisions pertaining to his various professional activities. To better safeguard and promote his interest and that of the profession, our legislatures should contain more representatives of the medical profession. As physicians we have been too content to leave to others the formation and enactment of legislation of vital importance to our profession and the various activities for which the public holds us responsible.

This is particularly true in legislative matters relating to school health service. The fault is largely our own, one of neglect. Legislators as a rule are not acquainted with the purposes and needs of school health service. They are unfamiliar with its system of organization and administration. They rarely hear of its accomplishments.

When once informed they manifest a keen interest in its promotion. They look to us to advise them.

To do so is a professional duty as well as a privilege, that we have long neglected. This long lost opportunity should be seized and capitalized by the medical profession. By getting better acquainted with our legislators, working with them and for them, we can do much to enhance the cause of school health service and to promote the interests of the medical profession.

*Medical Leadership for Cooperation.* Every system of school health service should be a co-operative one. It should include the school authorities, the health authorities and the civic authorities. It should have for its definite purpose the mental and physical health of the child, around whom it should be constructed. In its participation it should include the parent, the teacher, the nurse, the medical and dental professions, and such public and private agencies as can be enlisted in the promotion of child welfare.

It should exemplify good official, professional



and community team work in health service. All should have a common interest in its success. Each community should feel responsible for its efficient administration. Parents and teachers should share their special responsibilities. Physicians and dentists should work in full accord with each other and with the medical inspector. For the coordination of purposes and the cooperation of activities in school health service a well trained physician should be made responsible for its administration.

*Medical Leadership for Generalized Practise.* The medical profession seems to be rushing into the grave danger of overspecialization. The pendulum is swinging too far and too rapidly in that direction. One of the most serious results of this recent movement is the rapid passing of the general practitioner with all he means to his people, to the profession and to the community. Though we need specialists, and always will, to whom cases can be referred, and from whom assistance in specialized information can be obtained, we are in still greater need of more physicians with a better general medical knowledge, with a deeper interest in and a keener observation of conditions of childhood, with an ability to visualize the whole child and to administer wisely to his physical and mental welfare. We must remember that it is not the body alone, or the mind alone that we are training but the whole child organism and that we must deal with him as an individual health unit. As physicians we should discourage the young graduate going directly from his internship into a specialized field as so often happens today. Let us rather encourage him to profit by several years of generalized work, much to his future advantage and to the benefit of many needing his attention. Let us remember that it is neither possible nor advisable that we should all be specialists. Let us be content, and encourage others, to be good general practitioners rather than poor specialists as sometimes happens. Let us do such as we can to perpetuate the family physician, so greatly needed, so indispensable to the profession, so able in many instances to render the services for which the specialist is not needed and often no better qualified.

*Medical Leadership for Communicable Disease Control.* School health service began with communicable disease control as its single purpose.

Its original purpose is still an important part of the work. Physicians began it and are still carrying on. Since its inception many advances have been made in this particular field of its activity. Today we are much better informed as to the etiological factors responsible for communicable diseases and the most effective measures to be employed for their control. More and more attention is being given to the preventive side of the work. Immunization is being extensively practiced against diphtheria and typhoid. Early diagnosis is more and more common. Better sanitation and safe water supplies are more often provided. Personal knowledge in health essentials has materially increased. Individual and community interest in health conservation has rapidly grown. Much indeed has been accomplished.

Most of this modern improvement is due to the activities of our national, state and local health authorities under medical leadership. Their efforts merit the cordial support and cooperation of the medical profession in general. Every physician should be a health worker among his families. He should not only assist nature to relieve itself of disease but to prevent it. He should be a health teacher, a health director to his people. He should do more to keep them well than to get them well, to aid them to retain that which they most enjoy—*Health*. In doing this there is no phase of his work in which he can accomplish more than by supplying proper medical leadership to his families in the prevention of communicable diseases.

*Medical Leadership for Mental Health.* There is probably no phase of human health that has been so misunderstood, or so seriously neglected, as that relating to the mind. Until very recently few physicians have taken any interest in the mental health of children.

Their mental twists as indicated by behavior symptoms of various kinds, if recognized, received little or no attention. It was thought in most instances that the children unaided would outgrow their tantrums or other peculiar mental habits. This reasoning today we know to be unsound.

Reliable psychiatrists tell us that today there are more than 900,000 children in American schools who, should the present rate of admission continue, will some day be committed to institu-



tions for mental disorders. This is surely a startling statement. We are also advised by the same authority that probably one-half of the mental wreckages of adult life as found in the psychopathic, the neurotic, the delinquent and maladjusted, have their incipency in childhood.

Many of them eventually become manic-depressive, dementia precox, or paranoiac cases and finally end in an institution for mental diseases. Much of this distressing condition can, we are told, be prevented. The physician, especially the psychiatrist, is the logical person to lead in a much needed crusade for Mental Safety for Childhood with all it would mean to child and adult life. It should be taught to educators and to parents and applied to children.

The family physician's relation to such a mental health program is most important. He better than any one else is familiar with the family history, the home environments and many other factors contributory to nervous disturbances in the children of his clientele. He, though an untrained psychiatrist, becomes in many instances the controlling factor in the case. On the medical profession rests a great responsibility to furnish proper leadership in this rapidly expanding field of mental hygiene.

Today no greater opportunity offers itself to the physician than to participate actively in this work, which promises so much both to child and to adult. Should it not be worth while to place our combined medical knowledge at the service of thousands of helpless children and unsuspecting parents to prevent impending mental disasters?

*Medical Leadership to Prevent Commercialization.* The popular favor with which school health service has been received and its rapid growth have furnished to some people an opportunity to commercialize on the school child. This is frequently seen in the willingness of some people to advise and sell glasses for children who do not need them or who might be better off without them. It again occurs in some places where tonsils are indiscriminately removed regardless of their pathological or obstructive condition or attendant symptoms. More recently we find further evidence in nutritional work where the astute advertiser urges parents to go to the drug store to buy various vitamins for their children. With few excep-

tions, we know the drug store is not the best place to buy vitamins. Other similar instances might be mentioned.

Could we not and should we not as physicians so advise our families that they may know when surgical attention is needed for tonsillar or other conditions, when glasses should or should not be worn, where food value can be best obtained and how to do the right rather than the wrong thing for the mental and physical welfare of their children?

*Medical Leadership to Prevent Substitution.* For several years there has been a growing disposition by some people to substitute others to render the services that should be performed by the physician or under his direction. This mistake is made even by some administrators who, while they admit health should come first in an educational program, seem quite willing to make it secondary by placing its direction in the hands of people untrained in medicine and incompetent to visualize the health of the whole child. Such a plan, as might be expected, leads only to failure.

While many should cooperate with the physician in a school health program, in safety to its success no one can be substituted for him. He should lead. There is no phase of health service in which substitution is more hazardous than in that of child welfare. To substitute is to deceive, to engender weakness, to invite failure. The most effective way in which to prevent such a serious mistake in school health service is for the physician to do well those things for which substitution for him is attempted.

*Medical Leadership for Publicity.* The ethical physician rightfully refrains from publicity. For years he has left it to others to give public instruction regarding personal and community health. Much of the information thus given has been misleading, unreliable and often dangerous. This failure by the medical profession to furnish reliable public information regarding health matters has done much to enable various cults to practice their deception on the public. In many instances it has diverted service from the regular to the irregular, from the trained to the untrained, from the conscientious physician to the charlatan, at the expense of the misguided victim. It would seem as if some ethical plan might well be arranged by which the profession

through some official organization, e. g., the County or State Society or through medical journals, could furnish to the public press health information of such a character that more people would turn to the physician rather than to the empiric, by whatever name, for health direction.

*Better Preparation for More Efficient Medical Leadership in School Health Service.* It would seem as if we would all agree that the better prepared we are as physicians and the more interested we are in school health service the more effective would be our contribution to its efficiency. In recent years there has been a gradual increase in better qualifications of physicians and the interest they are taking in the work. The time has come, however, when a more definite program might well be adopted by which physicians who are to assume the leadership of so important a phase of health as the conservation of the physical and mental welfare of school children, should meet special requirements. With this idea in mind the New York State Department of Education has recently adopted the following qualifications for full-time school physicians who are hereafter to be known as school medical supervisors.

1. Graduation from a medical school registered by the Department of Education and licensed to practise medicine in New York State.
2. One year of acceptable internship. Five years of successful practise in medicine may be accepted in lieu of one year of internship.
3. Six semester hours of post-graduate work in a school (or schools) of medicine in such subjects and in such institutions as may be approved by the State Commissioner of Education.

The following subjects indicate the type of instruction that should be included in such postgraduate courses:

- (a) Medical examination of school children.
- (b) Psychiatric problems of school age.
- (c) Problems of growth and nutrition.
- (d) Preventable defects of eyes, ears, teeth, posture.
- (e) School sanitation.
- (f) Communicable disease control.

4. Six semester hours of postgraduate work in a school or schools of education in such subjects and in such institutions as may be approved by the State Commissioner of Education.

The following subjects indicate the type of instruction that should be included in such postgraduate courses:

- (a) Principles of Health Education.
- (b) Organization and Administration of Health Education in Public Schools.
- (c) Methods of Supervision.

The State Commissioner of Education may grant a temporary certificate to physicians who present satisfactory evidence of successful experience for three or more years in medical inspection and health service.

The temporary license shall be valid for only one year, but may be renewed twice upon presentation of evidence of postgraduate work as suggested in paragraphs 3 and 4 above.

5. Medical supervisors appointed prior to September 1, 1928, shall, unless otherwise qualified, be required to take six semester hours of acceptable postgraduate work prior to September 1, 1931.

6. Where undergraduate medical instruction and training have included special preparation in the field of health service equal to the qualifications set up for postgraduate work, such undergraduate preparation may be accepted for the certification of medical supervisors.

*Organization for Medical Leadership.* Until recently, 1927, no widely organized effort has been made to mobilize physicians, school medical inspectors in particular, for the betterment of school health service, under medical leadership. Other groups interested in school health promotion have organized for that purpose to their advantage and with gratifying results. This is particularly true of physical trainers who by State and national organizations have done much to popularize this important part of the health program. By their organized efforts they have also done much to expand their activities and to gain more liberal recognition in the field of school health service. Their success is most commendable. As physicians we should congratulate them and profit by their experiences.

Believing similar efforts should be made by school physicians, representatives from 22 States met in Cincinnati last October and organized the American Association of School Physicians. Officers from twelve states were elected and a constitution and by-laws adopted. The chair-



man of your section on hygiene is one of the official staff. The purposes of the Association as stated in its Constitution are as follows:

1. To create and maintain a deeper interest among all physicians in health service in schools.
2. To study and advise regarding the various health problems involved in school health service and to insure under medical direction their proper management.
3. To cultivate a closer cooperative relationship among physicians engaged in health work in schools, and to establish a better understanding in the profession as to the purposes of the service.
4. To coordinate more effectively the various agencies, medical, dental and others interested in and willing to cooperate in school health service.

Though less than seven months old the several hundred members of this young association reach from coast to coast and from Canada to our southern borders. Organized efforts will be made to stimulate greater interest among all physicians in school health service, to promote the interests of the medical profession in its relation to the work, and to encourage better preparation for efficient medical leadership.

Several strong committees are already at work to prepare recommendations to be submitted to the next annual meeting to be held in this city in October. When this organization functions as is planned, many of the problems of medical leadership in school health service presented in this paper will receive careful consideration and a definite contribution will be made, we hope, to their satisfactory solution.

#### BARBITURIC HYPNOTICS IN THE PREVENTION AND TREATMENT OF RHINOGENIC COCAINE INTOXICATION\*

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The use of cocaine in rhinologic practice is so generalized and of such frequent occurrence as to present great potentialities for overdosage and intoxications. It is especially a matter of

common experience to operators doing large amounts of intranasal surgery, to be confronted by so-called "reactions," and this is most frequently the case when using cocaine "mud" or "flakes," the resulting reaction being a more or less mild cocaine intoxication. Especially is this true when the patient happens to possess an idiosyncrasy to the drug and is therefore susceptible to even minute amounts. While serious accidents with cocaine anesthesia are not frequent, they still occur and may be expected to as long as the drug will be used. Despite the relative paucity of reported cases in the literature, severe intoxication, syncope and even death have followed its use, all of which has been important enough to lead to a number of investigations regarding the methods of using the drug, of preventing its ill effects, and searching for less toxic substitutes. The Council on Pharmacy of the American Medical Association has issued, of late, a statement decrying the promiscuous use of cocaine, especially in the form of "flakes" or "mud" and in greater concentrations than 20%. The urge for a drug having the anesthetic qualities of cocaine but not its toxicity has caused a number of newer anesthetics to be elaborated, none of which have been able to duplicate its ready absorbability and efficiency as a local application for anesthesia of mucous membrane. It is consequently in widespread use amongst rhinologists who as a rule are cognizant of its dangers.

The ill effects consequent to the use of cocaine may occur in two ways: through the administration of a toxic dose or because of the presence of hypersusceptibility in the patient. The effect due to the former may in a large measure be avoided by careful consideration of the dosage, and by remembering that the drug is rapidly absorbed from the gastro-intestinal tract and not from the respiratory tract. This causes us to caution our patients against swallowing the salivary or post nasal secretions that may accumulate during our attempts at effecting a nasal or oropharyngeal anesthesia with cocaine. Fatalities resulting from the use of cocaine in infiltration anesthesia which were so common in earlier days have practically disappeared, but those due to the injection of the drug by mistake under the impression it is procaine still occur and it is the practice in many hospitals to color their

\*From the Clinic of Drs. J. C. Beck and H. L. Pollock

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solutions so as to distinguish them easily. These precautions are essential in preventing the administration of toxic doses of the alkaloid. Reactions subsequent to the exhibition of the drug in a susceptible person cannot as a rule be foretold, as in cases of idiosyncrasy, mild and even dangerous poisoning may result from small amounts. Since the use of cocaine as a local anesthetic on mucous membrane has not as yet been successfully equalled by any of the newer preparations, any means that may be employed to make it a safe anesthetic are to be welcomed.

The pharmacodynamics of cocaine have been fairly well established. The drug aside from its local anesthetic properties is well known as a cerebral stimulant. In deaths following cocaine poisoning there is always a period in which clonic convulsions are present, indicating cordical stimulation. Associated with the convulsions is a marked hypernea that is due to an overstimulation of the respiratory center. This hypernea soon becomes irregular and the respirations cease after a period of flutter type of breathing which is evidently due to an exhaustion of the respiratory center consequent to the overstimulation. The heart however continues to beat for some time and death can be prevented, for a time at least, by artificial respiration. In some instances artificial respiration carried on for a number of hours has allowed laboratory animals to recover entirely. The clonic convulsions and the hypernea are evidently the result of an overstimulated cerebral cortex and respiratory center.

Morita<sup>1</sup> has shown that the typical respiratory failure associated with the flutter type of respiration does not occur in the decerebrated rabbit, and Feinberg<sup>2</sup> has observed a marked increase in the tolerance to cocaine in the laboratory animals prepared in that manner. Richet<sup>3</sup> notes that the sensitivity of different animals to cocaine is in direct proportion to the complexity or state of development of the brain and that in consequence man is most sensitive. In view of the foregoing it is not unnatural to suggest the use of some pharmacodynamic antagonist in the treatment of cocaine intoxication, namely, a cerebral depressant. Ether, chloral hydrate, morphin and several others have been used with but little success. Joel and Frankel<sup>4</sup> note that cocaine addicts not infrequently use barbitol in

controlling the excitement stage of an intoxication. Hofvendahl<sup>5</sup> has reported on the successful use of barbitol in the treatment of cocaine poisoning in the monkey (*Macacus rhesus*) and Tatum<sup>6</sup> and his co-workers at the University of Chicago have elaborated on the animal experiments including the monkey (*Macacus rhesus*) and reported equally good results. They found that the more complex the structure of the brain, the more susceptible was the animal to cocaine and also directly more amenable to hypnotic treatment with barbitol. The work of both Hofvendahl and Tatum and his co-workers has been corroborated by Nielsen.<sup>7</sup> All have found that the minimal lethal dose of a subcutaneous injection of cocaine could be raised several fold by a previous intravenous injection of soluble barbitol and animals in convulsions due to cocaine poisoning recovered if given a proper dose of soluble barbitol, provided however that the convulsions had not been allowed to continue too long. The intravenous administration of the hypnotic caused an immediate cessation of the convulsions and it was apparent that the likelihood of recovery was in inverse proportion to the time that the convulsions were allowed to continue.

Hofvendahl recommended the use of 20 c.c. of a 5% solution of soluble barbitol, as an intramuscular injection immediately upon the appearance of severe symptoms of intoxication and warns us that when the stage of convulsions has been reached intravenous administration alone may be absolutely necessary. Tatum et al. advised the use of 100 mg. of soluble barbitol in a saturated solution of paraldehyde in saline for every kilo of body weight. They advocated the preparation of such a stock solution to be available in an emergency.

In the light of the facts it was not unnatural that we were led to use phenobarbital in a case of cocaine sensitiveness. Early in February of 1926 a woman in whom signs of intoxication appeared during local application of cocaine to her nose, responded very well to the administration of a barbituric hypnotic, and at a subsequent occasion failed to show any evidence of her idiosyncrasy if 3 grs. of phenobarbital was administered thirty minutes before the application. If however no drug was administered before exhibiting the cocaine she immediately evidenced

signs of intoxication. A few days later a patient undergoing local anesthesia with cocaine became toxic and promptly became quiet after the administration of the phenobarbital. A number of similar cases in which the drug was apparently successful in combating and also in preventing cocaine intoxication led to the advocacy in a preliminary report<sup>8</sup> in the *Archives of Otolaryngology* of the use of phenobarbital as a treatment and prophylactic in cocaine poisoning. It was also suggested at the time the drug might act as a preoperative sedative in addition to its role of a prophylactic agent. The proof of the experimental work of Hofvendahl, Tatum and Neilsen quoted above, was apparent in its first clinical application in man by us. In the following year Leshure<sup>9</sup> reported the clinical success in the use of barbital in the same manner, and later on Williams<sup>10</sup> confirmed the efficacy of barbital in the prevention and treatment of cocaine intoxication.

A careful review of our experience with barbituric hypnotics since early in 1926 more than justifies its employment as a means of prophylaxis and treatment of cocaine intoxication. A few statistics are illuminating. From April 1, 1925, to April 1, 1926, there were performed at the clinic 416 operations under local cocaine anesthesia. Of this number seventy-eight or 19% showed some signs of intoxication. It is true that in the majority of instances the symptoms were of a mild nature and consisted mainly of restlessness, tremor, palpitation of the heart and a marked loquacity, pallor and icy sweat. However, a few patients evidenced symptoms of profound intoxication although none ever progressed to the stage of convulsions. In the last three months of this period we had the opportunity of observing the effects of phenobarbital on sixteen of the seventy-eight patients that showed some evidence of poisoning. In these sixteen instances the symptoms were relieved in every case by the administration of the barbituric hypnotic. From April 1, 1926, to April 1, 1927, there were performed 391 operations under local cocaine anesthesia. In this period, however, we substituted instead of the morphin and atropine, three grains of phenobarbital thirty minutes before operation. In this series there were but two reactions, one of which was not typical and the pa-

tient was seen by a neurologist who happened to be nearby and pronounced it hysteria. The other was a true case of intoxication and upon investigation it was found that the drug had been given just as she was taken into the operating room thus not allowing sufficient time for its absorption from the gastrointestinal tract. In this period then only one case of true intoxication occurred and then only because of faulty administration of the drug. From April 1, 1927, until March 1, 1928, 312 operations were performed under cocaine anesthesia and one case exhibited signs of intoxication. Here through some mistake the drug was not ordered for the patient. Therefore in a consecutive series of 703 cases in which phenobarbital was administered correctly thirty minutes before operation not a single case of cocaine intoxication was seen. When this is compared to the 19% observed in the period in which it was not used one may readily understand our faith in the use of barbituric hypnotics as preventatives of cocaine poisoning. Since the time that we have been using phenobarbital as a prophylactic we have not had any occasion to use the drug in management of a severe intoxication, but it was reported to us<sup>11</sup> that the hypnotic had been successfully used in a case of serious collapse following the injection of 10% cocaine solution under the impression that it was novocaine. The patient rallied after injection of the hypnotic. In view of these observations as well as the animal experiments cited above it is not unnatural to reach the conclusion that the barbituric hypnotics rank amongst our best possessions in our therapeutic armamentarium for the treatment and prophylaxis of cocaine intoxication.

*Dosage and Administration:* Barbital and phenobarbital are not soluble but their sodium salts are. As a prophylactic one may use 3 grains of phenobarbital or 10 grains of barbital 30 minutes before operation, so as to afford plenty of time for absorption. If one desires to use it hypodermically the same amount of the sodium salts may be injected, e. g. 3 grains of soluble phenobarbital (sodium phenobarbital) or 10 grains of soluble barbital (sodium barbital).

In mild intoxications the above dosages of the soluble salts are given hypodermically.

In severe intoxications intravenous adminis-



tration of the above dosages are repeated until the convulsions cease.

#### CONCLUSIONS

1. The barbituric hypnotics are valuable drugs in the prevention and treatment of cocaine intoxications.

2. Their use for this purpose is rational and rests upon exact pharmacodynamic basis.

3. Their theoretical efficiency, also demonstrated by animal experimentation has been clinically proved by us and substantiated by others.

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#### DISCUSSION

Dr. Harry Pollock, Chicago: In this paper the statistics were taken from our clinic and there is very little left for me to say. Dr. Guttman forgot to say that we use pure cocain crystals in all our work without adrenalin. We use cocain dipped in water, and plenty of it. Since we have used luminal we have not had any reactions as we formerly had. We have never had any occasion to employ barbitol intramuscularly or intravenously because every case is given luminal a half hour before using the cocain. The two cases mentioned that had reaction had been given luminal just after they came to the operating room and it did not have time to be absorbed from the gastro-intestinal tract. We have used it for almost two years and expect to continue to use it. If anything, it composes the patients more quickly after the operation. I cannot see that it alleviates the pain any, but they are much quieter after the operation than before we started using the barbituric preparation. I can recommend this procedure highly. There is no morphin used.

Dr. Robert Sonnenschein, Chicago: I would like to call your attention to the fact that it is not necessary to use cocain in tonsillectomy. I use the nerve block method, which was not original with me, but in which I combined two methods and

added alcohol. Yankauer advocated a method that was devised in 1910 in which he used cocain for blocking the posterior palatine nerves. I use procain or apothesine to which enough alcohol is added to make a concentration of 25 to 33 per cent. solution, being careful not to penetrate the depth of the crypts, otherwise you get infection of the deep tissue. I make three injections, one *without* alcohol in the hard palate, and two external to the tonsil, using no cocain at all. We have a good anesthesia and no toxemia at all. I originally added alcohol on the assumption that you would get prolonged anesthesia. We find it had this effect and also that the patients were exhilarated by the alcohol that entered the circulation and we had very few cases of syncope or fainting. In reference to Dr. Ross' work, there is no danger in using adrenalin and cocain if you use the adrenalin and then wait four or five minutes for the pressor effect to disappear before using the cocain. I am here referring to cocainization within the nose, and not the throat.

Dr. M. Reese Guttman, Chicago: I might say that ever since Ross of Northwestern published his findings regarding the synergistic toxicity of cocain and adrenalin, we have discontinued the use of adrenalin and use plain water instead when preparing the cocain "mud."

#### CHOICE OF TREATMENT IN GYNECOLOGICAL INFLAMMATORY LESIONS\*

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Gynecology is essentially a specialized department of surgery. Treatment of gynecological lesions, in all its forms, must be considered as surgical treatment. Therefore, correctly speaking, choice of treatment lies not between surgical and medical measures but between surgical and palliative measures. It is not the purpose of this paper to suggest specifically how to treat a patient with a gynecological lesion but to take up the more general question of choice of the correct *form* of treatment.

The information or suggestions which follow are not presented as being derived from a personal experience alone, but rather as what is considered the best present-day information regarding a subject which cannot receive too much emphasis. Therefore, eminent authorities will be freely quoted and an endeavor will be made to give an abridged survey of the literature of

\*Read before the Evanston Branch, Chicago Medical Society, Jan. 12, 1928.



recent years as well as a report of a review of some records from the gynecological dispensary at the Northwestern University Medical School.

Lesions of the lower genital tract will be considered but superficially in passing. Infection of the glands of Bartholin demands, as a rule, surgical treatment. Incision and drainage may suffice, but to insure permanent eradication of the infection, complete extirpation of the glands is the preferable procedure. Palliative measures may be tried in infections of Skene's ducts, but the surest method of eradicating these infections is by use of the actual cautery. With the cautery the ducts may be split open and the tracts, with their contents, be destroyed. The treatment of urethritis is palliative as it usually is also in vaginitis and vulvo-vaginitis. The pavement cell mucosa of the vagina forms an efficient barrier, in most cases, against serious inflammation.

Because of the histological structure of the uterine cervix, infections of this organ present a formidable problem in treatment. Local antisepsis is practically useless because the infecting organisms very quickly pass through the single layer of columnar epithelium of the cervical mucosa and into the numerous complex, racemose, deeply penetrating glands with which the mucosa abounds. Here they are well protected against the local application of antiseptics. Though general palliative measures may result in relief from cervical symptoms, infections of the cervix are prone to become chronic, though not always troublesome. Vaccines, radium or one of the electrical modalities may be tried with some hope for success. Non-specific protein therapy has proved of value in some of my own cases. But in the chronic resistant infection with troublesome discharge, marked erosions or ectropion, or multiple cystic formation (nabothian), surgery is indicated. (In passing I wish to call your attention to an important observation by Curtis. In the treatment of leucorrhea your attention must not be directed to the cervix alone. Skene's ducts are another important source of these discharges and must not be overlooked.)

In the surgical treatment of cervical affections of inflammatory origin the actual cautery is preferable in most cases because of the simplicity of its application and because it does not

disable the patient. The treatment may be carried out in the office and without anesthesia unless the patient possesses an unstable nervous disposition. One drawback to this treatment is that one application is not always sufficient. It is important, before cauterizing the cervix, to inform your patient that the discharge will be greatly increased for a period of two or three weeks before it stops. Otherwise serious misunderstanding may result. For the permanent cure of a chronic endocervicitis in one procedure the Sturmdorf operation offers the best results. This consists of a conical excision of the endocervix including any erosions or nabothian cysts that may be present and relining the canal with healthy mucosa. This operation, properly executed, will cure the lesion and leave no obstruction to future pregnancy and delivery through the natural passages.

Since the work of Curtis some years ago endometritis is no longer considered as an entity. Curettage for this condition is a thing of the past. Here it is interesting to note some further observations by Curtis<sup>1</sup> regarding infection of the uterus. The uterus is normally sterile and a clean uterus may be entered *once* almost with impunity. However, it is difficult to invade the uterine cavity without introducing some bacteria. Therefore, repeated invasion of the pregnant uterus is highly dangerous and, while supravaginal hysterectomy is itself a clean operation, when performed several days after a diagnostic curettage it becomes an unclean surgical procedure. When a diagnostic curettage is to be followed by hysterectomy the operations should be done on the same day or be separated by an interval of several weeks.

Intraabdominal pelvic inflammatory lesions provide an imposing proportion of cases, not only for the gynecologist, but for the general surgeon as well. These cases offer many and varied diagnostic problems and the choice of treatment is tremendously important. They afford a wonderful field for nice, balanced judgment—a field which is, no doubt, one of the most used and abused fields in all surgery. Here we encounter inflammations of the parametrium and fallopian tubes, the ovaries, the broad ligaments and the pelvic peritoneum. A partial review of representative opinion as to choice of treatment in the presence of these lesions, over

a period of the last twenty years only, is both illuminating and instructive. It discloses a complete reversal of attitude, both toward choice of treatment and the results to be anticipated following certain types of infection.

In 1907 Kelley and Noble,<sup>2</sup> in their textbook, "Gynecology and Abdominal Surgery," make the following assertions. Please note how at variance they are, in many essential points, with present day opinion:

The prognosis of gonorrheal pelvic peritonitis, so far as life is concerned, is good. Under symptomatic treatment the active symptoms subside in a few days. *Unless the diseased structure is removed by operation*, however, the attacks recur at more or less frequent intervals; and *there is little tendency to a spontaneous cure*.

The best time for operation is after the acute attack has subsided and the exudate has been absorbed. The patient should be kept in bed until this result has been accomplished and *then should be exposed to operation*.

*If, for any reason, an operation is declined or seems inadvisable—palliative treatment may be tried.* The choice of treatment of gonorrheal pelvic infections, at this time, was definitely in favor of surgery. Palliative treatment was reserved for such cases as refused surgery or where surgery was contra-indicated for other reasons. Quoting further from the same source:

A spontaneous cure of gonorrheal salpingitis *almost never occurs* and a relative cure with freedom from pain and recurrent attacks of salpingitis and peritonitis is rare.

In favorable cases of puerperal inflammatory disease (streptococcal) *the infecting organisms ultimately die* and most of the adhesions and structural alterations which have occurred during the attack undergo absorption so that the parts return to a normal or approximately normal state. In gonorrheal cases, on the contrary, *the infection is very apt to be persistent* and to remain more or less active over a considerable period of time, producing recurrent exacerbations of pelvic peritonitis *until the patient is relieved by operation*. Very exceptionally it is possible that gonorrheal pelvic disease may heal spontaneously through resolution of the inflammatory process.

As a rule, the only treatment that does any good is an operation to remove the abnormal conditions which are present. If the disease is due to chronic mechanical irritation or if it has resulted from gonorrheal or puerperal peritonitis and the infection has already died out (*this is very rare in the gonorrheal form*) local treatment may be used.

Nine years later, in 1916, Graves,<sup>3</sup> in his text-

book, "Gynecology," in speaking of the treatment of pelvic inflammations, makes statements much more conservative, showing a changing attitude as regards the choice of treatment. With reference to the treatment of acute salpingitis, he says:

The decision as to later operative methods is determined by various factors. If the attack of salpingitis is the first one, and subsides, leaving little evidence of disease by bimanual examination, it is best not to operate but to keep the patient under observation for the disease *may possibly heal spontaneously*. \* \* \* It is best, therefore, to wait and see whether the organs are to undergo a slow process of chronic adherent inflammatory disease or whether, perchance, the patient may not get well spontaneously.

Writing of the treatment of chronic pelvic inflammation, Graves says:

"The majority of these patients come sooner or later to operation."

In 1917, Crossen,<sup>4</sup> in his book, "Operative Gynecology," brings in another factor to influence the choice of treatment in intraabdominal pelvic inflammations. This is the factor of the "persistence of virulence" of the infecting organisms and you will note a reversal of attitude, based on investigation, with reference to this point. Crossen says:

The two principal infecting agents are the gonococcus and the streptococcus which vary widely in persistence of virulence, and for practical purposes all cases of pelvic suppuration (excluding tuberculosis) may be divided into two classes—gonorrheal and streptococcal—ignoring the fact that they may be due to other bacteria which in point of virulence lie between these two extremes, but in the present state of knowledge cannot be distinguished before operation.

In mentioning the fact that the majority of inflammatory masses in the pelvis become sterile after a time, attention must be called to an exceptional class—namely, the streptococcus cases. In streptococcal masses, automatic sterilization or attenuation is uncertain. Though sometimes present, its occurrence can never be counted on. In streptococcal masses, bacteria have been found active and virulent after long periods—even years. Consequently, in these cases intraabdominal operation is never safe.

In support of a statement that "in a considerable proportion of cases of chronic suppuration, the pus is sterile," Crossen gives the results of bacterial examinations of the lesions in 634 cases of chronic suppuration, excluding tuberculosis, as follows:



	Per Cent.
Sterile (assumed to be practically all of gonorrheal origin)	55
Saprophytes only	6
Gonococcus (usually attenuated)	22.5
Streptococcus and staphylococcus	12
Pneumococcus	2
Bacillus coli communis	2.5

He also quotes a later resumé reported by Hyde of nearly 3,000 cases, as follows:

	Cases	Per Cent.
Sterile	1,968	66
Gonococcus	564	19
Other bacteria and mixed infection	441	15

Pursuing the question of the persistence of virulence of the infecting organism, Crossen summarizes somewhat as follows:

The gonococcus was found to be absent or attenuated within two to four months after the infection. In some cases the gonococcus was found after several months or years but had lost its virulence. The conclusion is that operation in these cases should be postponed to three months from the onset of the trouble. But why wait for sterilization or attenuation in the gonorrheal cases? Because, first, a considerable proportion of pelvic inflammatory masses disappear, without operation, if nature is given a chance for three or four months; second, general peritonitis in gonorrheal infection is possible, as well as general dissemination of bacteria with involvement of joints and the endocardium.

Streptococcus infections persist indefinitely. Miller reports cases of six and twelve years' standing where virulent streptococci were recovered, and Martin reports one case of nineteen years.

Automatic sterilization of a streptococcus abscess is perhaps possible but is so rare that it is not to be counted on. A streptococcus mass in the pelvis is always dangerous and abdominal section for the same is likely to be followed by a fatal peritonitis. \* \* \* The only safe way to operate for streptococcus pus collection is by the extraperitoneal method. \* \* \* Intraperitoneal operations in these cases should be undertaken only when the patient's life is threatened by the severity of the inflammation and it is possible to reach the mass in a less dangerous way. (Crossen.)

Polak,<sup>5</sup> in 1921, in his monograph, "Pelvic Inflammation in Women," corroborates much of Crossen's testimony. He says:

We would feel from our clinical experience that over 75 per cent. of all pelvic infections have a gonorrheal origin. The importance of accurate diagnosis, as to type of infecting organism, is shown by a

study of the behavior of various organisms within the tubes. A large proportion of gonorrheal tubes ultimately become sterile after a period of six weeks to three months; death of the infecting gonococcus can be assured if both ends of the tube are closed; it lives longer if leakage occurs. On the other hand, pyogenic bacteria have unknown longevity, even when encapsulated, and retain their virulence for extremely long periods. \* \* \*

Time affects a symptomatic cure in a large number of tubal inflammations. This is especially true when the gonococcus has been demonstrated to be the only infecting organism present. The tube is often able to recuperate completely and have the patency of its lumen completely restored. Therefore, we feel that there is considerable virtue in palliative management of these subacute and chronic infections.

Thus again is emphasized the lack of necessity of many pelvic operations, performed for gonorrheal infections, before a thorough trial of palliative management; and, also, the danger of operation in pyogenic infections. Polak summarizes thus:

In pelvic peritonitis, the type of infection not only helps to determine the prognosis but suggests the plan of treatment to be adopted. In the gonorrheal type, with its typical history and clinical course, the tendency is toward localization of the process and spontaneous and symptomatic cure. On the other hand, in pelvic peritonitis of puerperal and post-abortion origin (pyogenic) the inflammatory reaction has a greater tendency to spread and involve a greater area of peritoneum and consequently is more apt to demand surgical measures to aid in arrest of the inflammation.

It is the desire of every surgeon that inflammatory reaction of the peritoneum be localized. This may be greatly assisted by palliative measures.

Again, in 1926, Polak<sup>6</sup> says, "It is encouraging to note that so many men are accepting conservative and intelligent and non-operative therapy in infections."

Curtis,<sup>1, 7, 8</sup> says that gonorrheal infection of the tubes is naturally quickly self-limited. Operations on the tubes for eradication of gonorrheal infection are not often indicated because the infection tends to disappear *if the patient is properly protected from reinfection* from the outside or from the neglected lower genital tract. So-called chronic gonorrheal salpingitis is usually a recurrence from one of these sources. Surgery should be delayed or reserved chiefly for the sequelae, e, g., adhesions, menstrual disturbances and sterility.

Streptococcus infection occurs usually as a complication of abortion or intrauterine manip-



ulation and is commonly only a part of a more widespread pelvic infection. The streptococcus, in contrast with the gonococcus, may remain viable for many months or even years. Curtis<sup>7</sup> also describes a point of value in diagnosis whereby, during an operation, the type of infecting organism may be fairly accurately ascertained. Even the most prolonged and most severe gonorrheal disease of the tubes is characterized by adhesions which are amenable to blunt dissection. Adhesions which require tearing or cutting speak for streptococcus or tuberculous infection.

This differentiation is of value because, in any given case, if there is a question of advisability as to removal of the ovaries at operation, more radical measures are indicated in streptococcus or tuberculous infections than in gonorrheal disease of equal severity, because viable bacteria probably remain buried in the tissues and there is a likelihood of post-operative chronic ovarian infection. If the infection is of gonorrheal origin, unless the ovary is badly affected, a part of it should be preserved.

Block and Mikelberg<sup>9</sup> reviewed a series of 120 cases which taught them to be open-minded in discussing treatment. They feel justified in telling their patients that about 75% of cases of pelvic inflammation can be relieved by non-operative treatment, although there may be recurrences of symptoms. Even patients that have been incapacitated for months or years can afford to try palliative treatment for three or four months before submitting to operation.

Watkins<sup>10</sup> says that surgery is not always indicated in pelvic infection even when the fallopian tubes are involved. Infected tubes frequently recover without operation. Operation for such cases are more often needed for the care of the residues of infection than for the infection.

Werner and Stiglbauer<sup>11</sup> report that at the Gynecological Clinic in Vienna, operative procedures are carried out on only 5% of their cases of pelvic inflammation and their end-results are favorable in but 79% of these cases re-examined; while non-operative treatment was not successful in but about 10% of cases.

H. Schmitz<sup>12</sup> repeats that operation should not be employed for relief of the infection but solely for the relief of sequelae.

J. A. McGlinn<sup>13</sup> says that in the light of our present knowledge, operation should not be done in subacute or chronic cases of pelvic inflammation until nature, aided by treatment, has had a chance to effect a cure.

The results of an analysis of a number of records of cases examined and treated at the Gynecological Dispensary of the Out Patient Department of the Northwestern University Medical School are herewith submitted. These records are not of selected cases but were picked at random. The analysis was made with special reference to the prevailing choice of treatment—not to specific methods.

Records examined .....	181	
Diagnoses of pelvic inflammatory lesions.....	196	
(15 cases showed two concurrent lesions.)		
Age of patients, from 16 to 60 years, most of them in the third decade.		
Average age, years.....	25	
Number of physicians represented in diagnosis and treatment .....	21	
Civil state of patients:		
Unmarried .....	25	
Married .....	136	
Widowed .....	10	
Divorced .....	4	
Unrecorded .....	6	
Diagnoses:		
Cervical inflammatory lesions.....	30	
Salpingitis .....	99	
Acute .....	27	
Subacute .....	13	
Chronic .....	59	
Pelvic inflammatory lesions.....	67	
Postabortal .....	8	
Puerperal .....	8	
Parametrial .....	33	
Tubo-ovarian .....	18	
	196	196
Duration of disease previous to first examination—from a few days to 10 years.		
Average duration, 15 months.		
Treatment recommended:		
	Cases	Per Cent.
Palliative in .....	158	80.6
Surgical in .....	38	19.4
Analysis of treatment recommended:		
Cervical lesions, 30 cases—		
Palliative .....	27	90
Surgical .....	3	10
Salpingitis, 99 cases—		
Acute, 27 cases—		
Palliative .....	22	81.5
Surgical .....	5	18.5
Subacute, 13 cases—		
Palliative .....	12	92.3
Surgical .....	1	7.7
Chronic, 59 cases—		
Palliative .....	45	76.3
Surgical .....	14	23.7
All other pelvic lesions, 67 cases—		
Palliative .....	52	77.6
Surgical .....	15	22.4

From the records it would appear that of the 38 cases in which surgery was recommended only a few accepted the recommendation. Most

of them refused operation at the time or did not return at the appointed time, or later. This may be interpreted as evidence of preference for what disability they might be suffering over an operation or, no doubt, in many cases, relief from their symptoms, in time, without operation. Most of the records were incomplete in discussing the results of palliative treatment. Those which did record fully showed good results in most cases, failures being included in the above report under surgical recommendation and not under palliative. If failure to report, on the part of the patient, after one or a few treatments may be regarded as a favorable response to treatment the results of palliative measures may be termed most pleasing. Into this phase of the discussion, however, this paper is not intended to go.

In summary it may be said that whereas, twenty years ago, surgical intervention was considered proper and essential in nearly all cases in the treatment of subacute and chronic intra-abdominal pelvic inflammatory lesions, today the weight of authoritative opinion and clinical evidence is against surgery until and unless palliative measures have been tried and have failed. It is important, however, to include, under palliative treatment, efficient protection against reinfection, either from outside sources or from neglected persistent infection of the lower genital tract, because chronic gonorrheal pelvic infections, which make up the majority of cases seen, are thought by some to be merely a series of reinfections and not true chronic infections.

With particular reference to infections of gonorrheal origin, it may be emphatically stated that there is no danger in postponement of operative intervention. Indeed there are distinct advantages. Delay means increased prospect of spontaneous recovery. If a later operation is required there will be greater ease in operating and improved prospects of conservation of an ovary, or tube and ovary, which would, of necessity, be sacrificed at early operation.

The choice of treatment in acute intra-abdominal pelvic inflammatory lesions has been intentionally passed over in this review because it is the generally accepted view that these conditions are to be treated conservatively except when spreading infection demands drainage.

The accepted principle then is to "get in, drain, and get out quickly."

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## ETHER ANESTHESIA IN THE TUBERCULOUS

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During recent years it has been fully recognized that a rapid spread of the disease often follows operations on the tuberculous under ether anesthesia, also that a latent inactive tuberculosis may become active under the stress of the operation due to the lowered vitality and resistance. For this reason, clinicians taking care of tuberculous patients generally advise against surgical intervention and ether anesthesia except under extreme circumstances. The detrimental influences of ether anesthesia may result from purely mechanical factors, such as, aspiration of infective material from an apical lesion to other areas of the lung causing aspiration broncho-pneumonia, or it may also be due to increase of the secretion in the respiratory tract during anesthesia, which dilutes the infectious sputum and in this way causing a general spread of the disease.

The danger of ether anesthesia in the tuber-



culous, however, has been very little stressed in the medical literature. One finds hardly any mention of it in text-books on medicine or tuberculosis. Fishberg, alone, in his text-book says, that a general anesthesia is dangerous to the tuberculous. Among the very few articles on this subject there is one by J. R. Eastman. He quotes many prominent internists, surgeons and anesthetists who replied to a questionnaire on the safety of ether inhalation anesthesia for surgical operations on the tuberculous. It is of interest to note that while some of the surgeons did not seem to have a great distrust of ether anesthesia in the tuberculous, the tuberculosis experts and anesthetists were almost unanimously in opposition to it.

Dr. J. T. Gwathmey, says, that it is the opinion of those in charge of tuberculosis camps in his vicinity, that ether given by inhalation to tuberculous patients sends them to their grave in less than six months.

E. R. Baldwin of the Trudeau Sanitarium is against the use of ether inhalation in all active tuberculous patients and in known latent or recently arrested tuberculosis. The sequence of events, he says, has in too many instances convinced him of the baneful effects of ether anesthesia in activating tuberculosis.

John Morgan of Rochester is convinced that ether anesthesia should not be given to latent, active or suspected cases of tuberculosis. The danger of immediate damage is great and much remote trouble is directly traceable to the ether inhalation.

E. R. Richards is of the opinion that a general ether anesthesia to the tuberculous is the "Match that lights the fire." He insists that a careful history for tuberculosis should be obtained and a thorough physical examination should be made before the patient is subjected to ether inhalation anesthesia. The presence of active or healed organic tuberculosis anywhere in the body should be a contra-indication to ether anesthesia.

J. J. Lilayd states that ether is a contra-indication in all known cases of tuberculosis, latent or active. He has seen a great many acute exacerbations following operations under ether anesthesia which pursued an unfavorable course.

Lee A. Whitney, says that he has not used anesthesia in any of the cases of bone and joint tuberculosis which have come under his direction.

His experience had been very unfortunate, several having died each year as the result of military tuberculosis following the administration of ether.

J. B. Hartwell gives an account of two patients who were operated on under ether inhalation anesthesia for tuberculous cervical adenitis who died within a year after the operation from military tuberculosis.

In our own experience at various tuberculosis clinics, we frequently came across patients who date the onset of their tuberculosis symptoms to some surgical procedure under general anesthesia. We also have observed very frequently that cases with latent tuberculosis, in adults, became re-activated following a general anesthesia. Our observation with the pre-tuberculosis child or children who have latent tuberculosis infection has shown even more unfortunate results in some cases.

We believe that ether anesthesia is even more detrimental to the tuberculous or pre-tuberculous child than to the adult; very frequently it is fatal to the child with a hidden focus of tuberculous infection. These children stand the anesthetic and operation shock very poorly, because their vitality and resistance become greatly depleted. Any sort of dormant infection, small as it may be, becomes active following which these children may develop some form of rapidly spreading pulmonary tuberculosis or military tuberculosis. Frequently these disastrous results may follow an ordinary tonsillectomy under ether anesthesia in a child who is not thriving well, in which case the attending physician is likely to think that the hypertrophied or infected tonsils are the sole offenders. In a communication by us of a study of 173 cases of open pulmonary tuberculosis in children we found among other etiologic factors in these cases, that in seven children the disease began following a tonsillectomy or shortly afterward—within three months. In two more of these cases it followed a general ether anesthesia for some other surgical procedure. Since then we have seen four more cases in which an advanced lesion of pulmonary tuberculosis followed shortly after the tonsillectomies under ether anesthesia.

The question then arises as to what can be done in those cases of active or quiescent tuberculosis which need to have a surgical operation



to be done under general anesthesia or in cases of tuberculous children in whom tonsillectomies are actually indicated.

We advise in these cases the use of the oil-ether-colonic method of anesthesia as advocated by Dr. J. T. Gwathmey in his book on "Anesthesia." There does not seem to be any special danger in this method, as the ether is given off and absorbed very slowly and the remainder may be easily washed out of the colon when the need of anesthesia is over. This method of anesthesia is also practical in obstetrical cases that are quiescent cases, and also in cases of active tuberculosis in which an abortion is considered necessary to save the life of the mother.

In conclusion we wish to call attention to the fact that a child who is not thriving well and presents evidence of defects such as hypertrophied tonsils and adenoids, dental caries or sinus infection may at the same time have a dormant tuberculous infection. It is up to the attending physician to be very conservative about using an inhalation ether anesthesia for removing or correcting these defects, for it is in this type of patient in which a dormant tuberculous infection may become activated with disastrous results following.

Children with positive tuberculin reactions and other physical signs and clinical symptoms that point toward glandular or pulmonary tuberculosis infection are poor surgical risks and every opportunity should be given them to raise their resistance to the highest level possible before subjecting them to operations under ether inhalation.

We wish to emphasize that a careful history should be obtained and a thorough physical examination including x-ray plates of chest and a tuberculin test made on every "Suspect tuberculous" child before subjecting him to an operation under ether anesthesia.

The oil-ether-colonic method of anesthesia should be used wherever possible for tonsillectomies and other surgical procedure in the latent and active cases of tuberculosis.

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## THE ROLE OF THE UROLOGIST IN GENERAL DIAGNOSIS\*

HERMAN L. KRETSCHMER, M. D.

CHICAGO

With the development of more and more complex problems in diagnosis and treatment, associated with epoch-making contributions from the fundamental sciences, and with the accumulation of clinical data and a broadening viewpoint of rendering the patient more efficient service, there arose a demand for a division of labor in the medical field which resulted in the development of specialization.

Specialization is neither a new nor a fixed type of practice, hence the specialist is no exception to the above statement, but must adapt his type of practice to the ever-changing conditions in medicine. Indeed, these statements may be applied to the general practitioner as well. Much discussion is rife nowadays about the lack of general practitioners. It has appeared to me that it is not the lack of general practitioners that should alarm us, or cause us so much concern, but our failure to realize and to recognize that the general practitioner has undergone enormous changes in his type of practice.

The same may be said of various other specialists, for example, the orthopedic surgeons who many years ago did no surgery at all and simply used manual methods in their practice. At the present time, orthopedic surgery extends over an exceedingly wide field of endeavor.

Many changes have come within the realm of urological practice. The early urologists, both in this country and abroad, were strictly speaking venereologists, devoting most of their time to the treatment of venereal disease and its complications. With the development of modern methods of diagnosis there evolved from this type of practitioner the forerunner of our present day urologist.

The urologist of the second period armed as he was with the cystoscope and the x-ray was concerned chiefly with the problems of diagnosis and differential diagnosis directly connected with his special field of work. From this there has developed the modern genito-urinary surgeon who has gone one step further in his procedure in that he has equipped himself therapeutically.

\*Read by invitation before the Kansas City Academy of Medicine, Kansas City, Mo., January 13, 1928.

tically with surgical technic, so that treatment, whether operative or non-operative, is in his realm of activity.

At about this time the problems of diagnosis which assailed him became more varied and widespread. The activities of the average urologist

in his specialty and the rest of the body can go hang. I am of the opinion that this criticism is far from being well founded. I do not believe that any specialist, no matter what his line of work, deteriorates, because of his concentration on his specialty, into a being who is purblind to the fact that his specialty is not divorced from the rest of the body. I am not in a position to take up the cudgels in behalf of specialists in general, although I am sure every specialist today is a good general practitioner, but I am in a position to asseverate that the activities of the present-day urologist are not only those of an ever-widening sphere, but added to this he touches upon all the problems of medicine. With

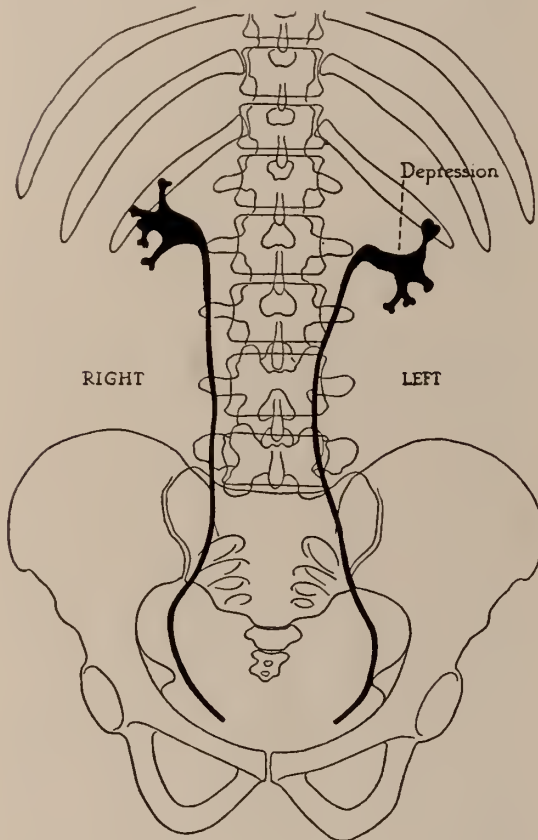


Fig. 1. Note depression on the outline of the left kidney pelvis due to Diaphragmatic Hernia.

were no longer limited directly to the realm of diagnosis and differential diagnosis of lesions of the genito-urinary tract, but in his work he touched upon general abdominal diagnosis. But the widening sphere of his activities do not cease at this point; many problems of general diagnosis daily concern him. Admitting this to be a fact, it goes without saying that the urologist, as he functions today, must not only be a well-qualified, all-around medical man, but must have a general medical slant on all diagnostic problems.

There seems to be a tendency today to belittle the activities of any specialist. Apparently it gives certain people a great deal of delight to poke fun at these activities, the ridicule showing up the specialist as one who is only interested

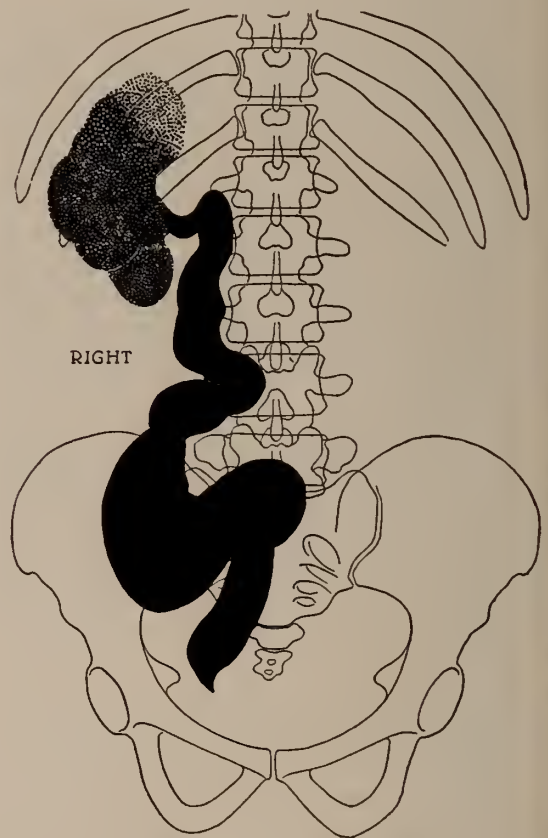


Fig. 2. Stricture of right ureter, hydroureter and hydronephrosis. Indefinite abdominal pain for thirty-two years.

this thought in mind, it occurred to me that a paper on the subject would be most opportune.

I shall avoid all unnecessary details and shall make the various case reports to be presented as brief as possible. Case reports will be mentioned only in so far as they may have a bear-

ing on the subject under discussion, while no attempt will be made to mention all the cases seen nor will some of the commoner lesions be mentioned or illustrated with case reports. The main object of this paper, as already stated, is to emphasize the fact that the urologist has a wide field of endeavor, that his problems touch upon many other fields of medicine beside his own and that his specialty is far from being a narrow restricted one.

#### TYPHOID FEVER

At first sight it might appear a little far-fetched to venture the statement that the urologist in his work may be concerned, in his differential diagnosis, with a consideration of typhoid fever. Typhoid fever touches upon the urologist's differential diagnosis in one of several ways:

1. Perhaps a common error occurs in the failure to make a differentiation between pyelitis and typhoid fever. For various reasons these two conditions are not infrequently confused, so that the urologist is called upon to lavage the renal pelvis in a case of typhoid fever under the mistaken diagnosis of pyelitis. In a certain number of instances, the patient has a typhoid bacillus infection, presents a few urinary symptoms, and the case not being recognized as typhoid fever is treated as a case of pyelitis because of the presence of pus and motile bacilli in the urine.

2. It should not be forgotten that typhoid fever may be superimposed upon an injury of the genito-urinary tract. As an example of this, the following case may be mentioned.

Case No. 1. Mr. A. B., male, aged 30, laborer, referred by Dr L. P. Kuhn. During his work on a new building as a laborer the patient fell from the second story and struck his left side on a large lime box. Following the injury bloody urine was passed. The patient was immediately sent to the hospital where a diagnosis of ruptured kidney was made. The diagnosis was verified by the presence of pain, evidence of trauma in the renal area, swelling, and the passage of large amounts of bloody urine. No cystoscopy was done and the x-rays were negative.

The patient's temperature rose and the pain in his side persisted for a few days. The diagnosis now covered, besides rupture of the kidney, the possibility of extravasation of urine and perirenal infection. A careful examination, however, failed to show corroborative evidence. Pulse, slow; temperature, high; leukopenia. On the strength of these

three symptoms a diagnosis of typhoid fever was made and the operation deferred pending further study. The patient subsequently developed a positive Widal test and typhoid bacilli were isolated from his blood.

While admitting that this is an unusual case, it illustrates, nevertheless, that the urologist is not a narrow-gauged specialist, but takes cognizance of diagnostic problems other than the problem involved in his own specialty.

3. On the other hand, the opposite condition may occasionally arise, in which a diagnosis of typhoid fever is made when the case is unmistakably a urinary tract infection. The fact that typhoid fever has a typical history and a characteristic mode of onset and that the cardinal symptoms are easy to elicit and are pathognomonic, should suffice to obviate mistakes in diagnosis.

Case No. 2. E. B. F., aged 32. Previous history negative, except that the patient had gonorrhea 18 years ago, since which time he has had urinary symptoms at intermittent periods.

Present complaint: Chills and fever, inability to pass urine freely, and straining upon urination.

For three years after gonorrhea was contracted, patient was treated by many doctors without much relief. At the end of the third year he noticed that he could not urinate freely. Sounds could not be passed. Ten years ago there was complete retention of urine, with severe pain, but when a sound was passed the condition was relieved. Several weeks ago the patient had a recurrence of his urinary symptoms, that is, inability to pass urine freely and straining upon urination, with chills and fever.

Physical examination: Patient's mind, cloudy. Tongue, dry. Head and neck, negative. Heart and lungs, negative. Examination of the abdomen: a suprapubic tumor was seen which extended two finger-breadths above the symphysis. Abdomen tympanitic. Spleen was not palpable. A few small red spots were seen on the abdomen which were interpreted as rose spots due to typhoid. Rectal examination was negative.

Blood count: Reds 4,100,000; whites 10,800; hemoglobin 80 per cent.

Tentative diagnosis: Typhoid fever. The blood smear indicated general septicemia, although the tentative diagnosis had been typhoid fever with retention of urine, this having been based on the patient's mental condition, the suspicious red spots, and the *positive* Widal. In this diagnosis I did not concur. The stupor might have been due to urinary sepsis and leukocytes instead of leukopenia, and the fast, rapid pulse was the antithesis of typhoid. The diagnosis was reversed and it was decided that the patient was suffering from urinary sepsis due to



urethral strictures. Filiform bougies and catheters were passed and bladder drained with an indwelling catheter. The patient made a rapid and uneventful recovery. Subsequent blood cultures and Widal tests were negative.

The case is interesting from the standpoint of differential diagnosis. It shows the ease with which a urinary sepsis and typhoid fever may be confused. The first positive Widal was probably the result of error somewhere along the line.

#### LESIONS OF THE HEART

At first blush it might seem somewhat presumptuous for urologists to consider lesions of the heart in their tables of differential diagnosis, and yet it is not uncommon for patients with certain types of heart disease to have complications on the part of the urinary tract which brings them to the urologist. Or, on the other hand, they are sent to the urologist for treatment and the organic disease of the heart is not recognized. Indeed, it is not uncommon for the urologist to see cases of organic disease of the heart that have been treated for a long time because of supposedly infections of the genito-urinary tract. This mistake may arise in case of malignant endocarditis, since infection of the higher urinary tract or profuse bleeding from the genito-urinary tract may accompany this disorder. Cystoscopic examination and ureteral catheterization in these cases will show that despite profuse bleeding, which constitutes the most prominent symptom, other pathology in the genito-urinary tract is lacking.

The protean manifestations of malignant endocarditis are such as to make its diagnosis extremely difficult. It may easily simulate typhoid fever, tuberculosis, and perhaps cerebrospinal meningitis. But, even though the literature rarely mentions the possibility of its confusion with chronic infections of the urinary organs, yet, from my personal experience, it would appear that these two conditions are not at all infrequently confused. This, at times, may be due to the presence of blood or bacteria and leukocytes in the urine, or, at other times, to the long continued fever without localizing symptoms.

(To be continued)

## Society Proceedings

### ADAMS COUNTY

The annual picnic of the Society was held June 12 at the Eagles' Alps. Unfortunately it rained during the day.

Because of the condition of the weather, no outdoor sports could be indulged in. At one o'clock the members sat down to a splendid chicken dinner which was thoroughly enjoyed by all.

After the dinner all present assembled at the Club House and Dr. J. W. E. Bitter, President of the Society, called upon some of the members for informal talks. Those responding were: Dr. Andy Hall of Mt. Vernon, Dr. Brittin of Athens, Dr. Crewdson of Louisiana, Dr. Nickerson of Quincy, Dr. Rutledge of Monroe City, Dr. Leonard of Springfield, Dr. Ball of Rushville, Dr. Buehner of Quincy, Dr. Wolfe of Quincy, and Dr. Center of Quincy.

HAROLD SWANBURG, M. D.,  
Secretary.

### FAYETTE COUNTY

The Fayette County Medical Society met May 17, 1929, in the Chamber of Commerce rooms in Vandalia. They had as guest speakers Dr. Fred O'Hara of Springfield and Dr. Andy Hall, Director of the State Department of Health.

Dr. O'Hara gave a very interesting talk on the subject of "X-Ray and Radium in the Treatment of Cancer." Dr. Hall talked on "Some of the Things Necessary to Keep Interest and Life in a Society." Dr. Hall is very enthusiastic and shows a fine spirit of co-operation with county societies.

After the meeting was adjourned all proceeded to the sandwich room where refreshments were served and a good social time was had by all.

There were 47 members and guests present from four surrounding counties.

### FRANKLIN COUNTY

The Franklin County Medical Society met at Benton in the offices of Drs. Moore and Reed May 29, 1929, with forty-one physicians present.

Dr. K. T. Meyer of Evansville, Ind., had as his subject, "Surgery of the Hand" and to illustrate the modes of infection in the various tissues of the hand the manner of spreading, as well as the methods of treatment, the doctor used a series of films which were very interesting and instructive to all who were present.

Dr. J. Y. Welborn of Evansville, Ill., conducted a round-table discussion of goiter which brought out many valuable points and provoked quite a general discussion.

In speaking of treatment of goiter, Dr. Ross of Mt. Vernon stated that for many years he has prescribed three grain doses, three times per day, of sulphate of chromium and obtained many satisfactory results. The

doctor also stated that he had used chromium in the same manner in the treatment of enlarged prostate and of uterine fibroids with equally good results. Dr. Welborn approved what Dr. Ross stated.

At this meeting one new member was received.

The following were named as censors: C. H. Eldridge, West Frankfort; M. A. Webb, Valier; J. B. Moore, Benton.

On the last Thursday in June the Franklin County Society will hold its annual picnic on the lake. This meeting will be for all physicians together with their families. An invitation to all physicians in Southern Illinois is extended, due notice will be given by mail. For that occasion the following committees were named: Committee on entertainment, H. A. Vise, Harry Philp, M. A. Webb; committee on lunch, E. C. Alvis, J. E. Reed, C. H. Eldridge; committee on program, C. O. Lane, W. H. Smith.

After extending a vote of thanks to Drs. Welborn and Meyer adjournment was had to the hall where had been prepared a Dutch lunch consisting of various kinds of sandwiches, pickles, onions, coffee, etc.

W. H. SMITH, Sec'y.-Treas.

### MERCER COUNTY

May 7, 1929, a meeting of the Mercer County Medical Society was held at the Oak View Country Club at Aledo, Ill. Dinner was at 6:30 in the evening and was followed by a business meeting. At this time new officers to serve for the coming year were elected.

Dr. H. P. Miller of Rock Island gave the first paper of the evening, "Blood Transfusion, with a Simple Method of Grouping." This was illustrated with lantern slides and diagrams. The paper was discussed by Drs. McEvers, Winbiger and Shuman.

The second paper of the evening was "Backache," by Dr. Sidney Easton of Peoria. This paper was illustrated by x-ray films and diagrams. The discussion was opened by Dr. J. Connell of Peoria.

Following the scientific program Dr. Chapman of Silvis gave a little talk on his recent trip to Washington concerning unfavorable legislation.

Twenty-seven physicians were present, representing Rock Island, Moline, Davenport and Mercer County.

JOSEPH DAUKSYS, Secretary.

### Marriages

THOMAS J. COOGAN, Chicago, to Miss Evelyn Bermingham of Fort Worth, Texas, at Lincoln, Ill., April 13.

GLEN E. GLASGOW, Hanna City, Ill., to Miss Dorothy M. Butts of Los Angeles, at Chicago, May 9.

RAYMOND GREEN to Miss Miriam Kiefer, both of Chicago, May 27.

### Personals

Dr. George A. Barnett has been appointed health officer of the village of Riverside.

Dr. Charles R. Smith, was appointed city health officer of Decatur, effective, June 15.

Dr. Winfred W. Hawkins has been appointed health officer of Wilmette, succeeding Dr. Edward E. Moore.

Dr. Elmer H. Best has been elected health commissioner of the city of Freeport.

Dr. James D. Smith, Benton, who celebrated his ninetieth birthday, May 17, is still in practice.

Dr. Nathan S. Davis III has been elected president of the Municipal Voters' League of which he was secretary from 1924 to 1927.

Dr. James B. Herrick, emeritus professor of medicine, Rush Medical College, gave the commencement address at Lewis Institute, June 20.

Dr. Sanford R. Gifford has been appointed professor of ophthalmology at Northwestern University Medical School and Dr. Murray Washburn, associate professor of medicine.

Dr. Charles E. Trovillion has resigned as head of the state hospital at Anna, and Dr. George W. Morrow, formerly assistant at the Kankakee State Hospital, has been appointed to succeed him temporarily.

Dr. Gladys R. H. Dick spent several days in Berea, Ky., in May with representatives of the state board of health rechecking the persons who gave a positive Dick test for scarlet fever during the recent epidemic in Berea.

Drs. Harry C. Rolnick, Harry B. Culver, Daniel Eisendrath and Charles M. McKenna were the first four to qualify in the recent examination for attending urologists at Cook County Hospital.

Dr. Irving S. Cutter, dean, Northwestern University Medical School, addressed the Harvard Medical Society at the Peter Bent Brigham Hospital, Boston, May 14, on "Etiology of Puerperal Fever—Its Historical Development."

Mr. Samuel Insull is reported to have offered



to endow a chair for preventive medicine at Queens University, Kingston, Ont., for \$50,000, provided the university officials agree with his representative as to the curriculum. Mr. Insull's first offer provided that the incumbent of the chair act as medical officer for Kingston but, the *Chicago Tribune* says, that offer was declined by the city.

Dr. W. D. Chapman of Silvis, who was recently elected president of the Illinois Medical Society, was the guest of honor at a complimentary luncheon held by the Moline Physicians' Club in the Elks' building, June 21. Dr. W. E. Taylor delivered a brief address, lauding Dr. Chapman and congratulating him on his election. A gift was presented to the Silvis physician by the club at the conclusion of the address.

Dr. Egil Olsen of Chicago today was named superintendent of the Detroit Receiving Hospital, to succeed Dr. Thomas J. Gruber, resigned. Dr. Olsen has been superintendent of the Englewood Hospital, Chicago, since 1915. Dr. Gruber will head the Eloise Hospital in Detroit.

### News Notes

—The St. Clair County Medical Society, East St. Louis, was addressed, June 6, at its last meeting preceding the vacation, by Dr. Logan Clendening, Kansas City, Mo., on therapeutics.

—The Chicago Orthopedic Club was addressed, June 14, by Drs. Emil D. W. Hauser on "Treatment of Neglected Clubfoot," and Freemont T. A. Chandler on "Elbow Case X-Rays." Dr. Philip Lewin presented roentgenograms.

—The Whiteside County Medical Society, Prophetstown, was addressed, June 6, by Dr. James R. Guthrie, Dubnue, Iowa, on "Preventive Medicine with Special Reference to Cancer," and by Dr. Leonard O. Riggert, Clinton, on Malta fever.

—The Monroe County Medical Society was addressed, June 19, at a dinner meeting at Columbia by Dr. Rutherford B. H. Gradwohl, St. Louis, on "The Schilling Differential Blood Count."

—The Ogle County Medical Society was addressed, May 17, at Oregon by Drs. Herbert Z. Giffin, Rochester, Minn., on "Various Types of

Anemia"; Channing W. Barrett, Chicago, on "Diagnosis and Treatment of Extra-Uterine Pregnancy," and George de Tarnowsky, Chicago, on fractures.

—Construction is under way on the Bobs Roberts Memorial Hospital of the University of Chicago, for which Col. and Mrs. John Roberts gave the university \$1,000,000 in memory of their young son. Dr. Russell M. Wilder was the principal speaker at the laying of the corner-stone, June 18.

—The Chicago Gynecological Society was addressed, June 21, at 50 East Erie Street by Drs. Alfred J. Kobak on "Fetal Bacteriemia"; Gustav Kolischer, "Diathermy in Gynecology," and William C. Danforth, Evanston, and R. M. Grier, Evanston, "Treatment of Fibroids Based upon a Series of 233 Cases."

—The Alexander County Medical Society, Cairo, was addressed by the city health officer, Dr. Charles L. Weber, May 17, on health problems. After the address the society adopted the following resolution: "While we, as members of the Alexander County Medical Society, are and always have been favorably disposed toward charity for the deserving poor, we nevertheless are not at all inclined to commit ourselves to any plan for free and indiscriminate clinics for diagnosis or treatment."

—The faculty and alumni banquet of Rush Medical College was held at the Auditorium Hotel, Tuesday, June 11. The toastmaster was Dr. Arthur Dean Bevan, chairman, department of surgery. Dr. Samuel R. Slaymaker, clinical professor of medicine, president, Rush Alumni Association, gave the presidential address on "Rush Alumni." Among the other speakers were the new president of the University of Chicago, Robert M. Hutchins; Dean Ernest E. Irons on "The Future of Rush"; Mr. Alfred T. Carton, member, board of trustees, Presbyterian Hospital, on "The Presbyterian Hospital and Rush," and Julius Stieglitz, Ph.D., professor of chemistry, University of Chicago, on "Medical Education and Rush."

—The mobile laboratory of the state health department, which travels about the state examining milk supplies and inspecting pasteurizing plants, covered 3,158 miles during 1928, making



possible the certification of 338 pasteurizing plants based on a physical inspection and a laboratory analysis of samples of milk from these plants, and an examination of the employees. The laboratory staff did all of this work except the physical examinations of the 1,807 employees connected with these plants. These examinations disclosed that forty-five employees gave a history of typhoid, and one proved to be an active carrier. The state department says that about half of the population in Illinois now has available a pasteurized milk supply from approved sources, but there are still thirty-four counties that have no pasteurizing plants.

—In a statement to the board of managers and medical staff of the Presbyterian Hospital, Dr. Arthur Dean Bevan, chairman of the department of surgery, reviewed the close relation which has long existed between Rush Medical College, the Presbyterian Hospital and the University of Chicago, as well as the great service which these institutions have rendered in the care of the sick and the training of physicians. The future will bring a greater opportunity, but to meet the demands, Dr. Bevan believes that there should be additions to the plant and a reorganization of the various medical, surgical and special departments of the Presbyterian Hospital and the medical school of the university. Among the additions which were considered necessary are a clinic building, a hospital for children and orthopedic patients, a maternity pavilion, a larger power plant and nurses' home, increased dispensary facilities, and a remodeling of the laboratory building at Rush, all of which, it is estimated, would require at least \$5,000,000. As evidence of their faith in the future of these institutions, Dr. and Mrs. Bevan have offered to create, if such improvements are undertaken, an irrevocable trust of \$1,000,000 to be devoted to this medical service and medical education.

—Hoffmann-La Roche, Inc., of Nutley, N. J., is the new names and address of the company formerly well and favorably known as Hoffmann-La Roche Chemical Works of 19 Cliff Street, New York City. Their advertisement appears as usual on page 9.

—Professor Mario Achille Dogliotti, of the Royal University of Torino, Italy, gave a demonstration in the Amphitheatre of the American

Hospital of Chicago, before a large group of physicians, June 14, on the following subjects:

1. A Simplified Method of Injecting the Gasserian Ganglion for Trigeminal Neuralgia.
2. A Simplified Method of Blood Transfusion (Whole Blood).

—Dr. Benjamin Goldberg, Secretary of the Board of Directors of the City of Chicago Municipal Tuberculosis Sanitarium, delivered the Twentieth Anniversary address at the Preventorium, at Farmingdale, New Jersey, on May 31, 1929. The Preventorium is the first institution of its type established in the world to care for children from tuberculous families, and at the present time houses six hundred children from the various communities in the States of New York and New Jersey.

It was established in 1909; sponsored by leading eastern capitalists, business men and philanthropists. Among the sponsors and supporters of the preventorium enterprise are: Felix M. Warburg, Mrs. Herman M. Biggs, Bradley Martin, Arthur Brisbane, Adolph Lewison and others.

—The practice of charity is one of the most ancient and glorious traditions of the medical profession, and only recently the Chicago Medical Society reaffirmed and published in its official transactions the ethical ideal that it is ready and willing at all times to serve the citizens of Cook County irrespective of their economic status. The profession feels, however, that only too frequently its desire to serve the public is misunderstood or taken advantage of by the unworthy. That charity is pernicious which takes from independence its proper pride and from mendicancy its proper shame. The abuse of charity leads for the physician to pauperization of the body and for the patient to the even more serious pauperization of the soul. In both cases civic pride is abolished by the personal degradation. The abuse of charity arouses the indignation of the physician because every such case prevents the extension of legitimate aid to a worthy object. This state of affairs is liable to continue, however, until society learns that the successful distribution of medical charity is a specialization which can only be accomplished through the exercise of the principle that MEDICAL MATTERS MUST BE MANAGED BY

**MEDICAL MEN.**—Inaugural address of Dr. Charles B. Reed.

—Examination of candidates for commission as Assistant Surgeon in the Regular Corps of the U. S. Public Health Service will be held at the following named places on the dates specified:

At Washington, D. C., September 9, 1929.

At Chicago, Ill., September 9, 1929.

At New Orleans, La., September 9, 1929.

At San Francisco, Cal., September 9, 1929.

Request for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

## Deaths

CLARENCE DRYDEN BARKER, Chicago; University of Illinois College of Medicine, 1904; a member of Illinois State Medical Society; aged 48; died, June 19, of carcinoma of the pancreas.

CHARLES RICHARD BECHMANN, Rock Island, Ill.; Rush Medical College, Chicago, 1896; aged 71; was killed, May 1, at Los Angeles, when struck by a street car.

ALFRED BEIN, Chicago; University of Illinois College of Medicine, 1897; a member of Illinois State Medical Society; aged 53, died at Lutheran Deaconess Hospital, June 8, of chronic nephritis.

SAMUEL F. DOUGLAS, Prairie du Rocher; Missouri Medical College, St. Louis, 1883; aged 75; died, June 3.

WILLIAM W. DOUGLAS, Hillsboro, Ill.; Missouri Medical College, St. Louis, 1880; formerly member of the school board; aged 70; died, May 8, of heart disease.

CHARLES IRA HOOKER, Pearl City, Ill.; Rush Medical College, Chicago, 1886; formerly a druggist; aged 70; died, May 1, of carcinoma of the stomach.

SAMUEL S. KEHR, Sterling, Ill.; General Medical College, Chicago, 1880; aged 76; died suddenly at the bedside of a patient, June 13.

DARWIN MILLS KEITH, Rockford, Ill.; University of Brussels, 1906, and Licentiate of Royal College of Physicians and Royal College of Surgeons, London, 1906; member of Illinois State Medical Society; aged 62; died, June 8, of pneumonia.

GEORGE T. LEEDLE, Chicago; College of Physicians and Surgeons, Chicago, 1891; aged 68; died, May 24, of chronic nephritis and bronchopneumonia.

CLARENCE MCCLELLAN, Chicago; College of Physicians and Surgeons, Chicago, 1901; member of Illinois State Medical Society; aged 61; died, June 23, at

Illinois Masonic Hospital, of coronary thrombosis and chronic nephritis.

ARTHUR CECIL MCINTYRE, Mendota, Ill.; College of Physicians and Surgeons, Chicago, 1902; aged 56; died, May 18, of cerebral hemorrhage.

WILLIAM A. MILLEN, Quincy, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1896; aged 57; died, May 18, in Asheville, N. C., of heart disease.

ROBERT LYMAN MORRIS, Decatur, Ill.; Medical Department of the University of Illinois, Chicago, 1904; member of the American Urological Association; served during the World War; formerly on the staff of the Decatur and Macon County Hospital; aged 51; died, May 31, of carcinoma.

ALBERT EARL MOWRY, Chicago; Northwestern University Medical School, 1898; a Fellow, A. M. A.; veteran of Spanish-American and World Wars; genitourinary surgeon, formerly instructor in Northwestern University Medical School, and since 1914 in Chicago hospital college of medicine; aged 55; died, June 16, of chronic nephritis.

GRANVILLE W. PREWETT, Marshall, Ill.; Missouri Medical College, St. Louis, 1882; formerly mayor and for twelve years member of the board of education; aged 79; died, April 28, of chronic myocarditis.

EDWIN W. REAGAN, Canton, Ill.; Rush Medical College, 1885; aged 71; died, June 12, while visiting his son at Fort Sheridan, of cerebral hemorrhage.

WILLIAM E. SCHENCK, Pekin, Ill.; Bellevue Hospital Medical College, New York, 1864; aged 89; died, June 4, of myocarditis.

JOHN H. STOTTS, Chicago; Chicago Homeopathic Medical College, 1893; member of the Illinois State Medical Society; on the staff of the Norwegian American Hospital; aged 62; died, June 2, of angina pectoris.

JOSIAH CURTIS TAYLOR, Hamilton, Ill.; Keokuk (Iowa) Medical College, 1899; aged 56; was killed, May 25, in an automobile accident.

WILLIAM HUBER VAN DOREN, Chicago; Eclectic Medical College, Cincinnati, 1896; member of Illinois State Medical Society; on the staffs of North Chicago and Evangelical Deaconess hospitals; aged 53; died, June 13, of cardiorenal disease.

JAMES S. WEAD, Wyoming, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1894; member of the Illinois State Medical Society; aged 60; died, May 16, of hypothyroidism.

ENFER CLINTON WEBSTER, Bible Grove, Ill.; St. Louis University School of Medicine, 1905; president and formerly secretary of the Clay County Medical Society; aged 50; was instantly killed, May 21, when the automobile in which he was driving was struck by a train.

FREDERICK A. WNOROWSKI, Steeleville, Ill.; Hospital College of Medicine, Louisville, 1897; aged 62; died, May 2, of cerebral hemorrhage.



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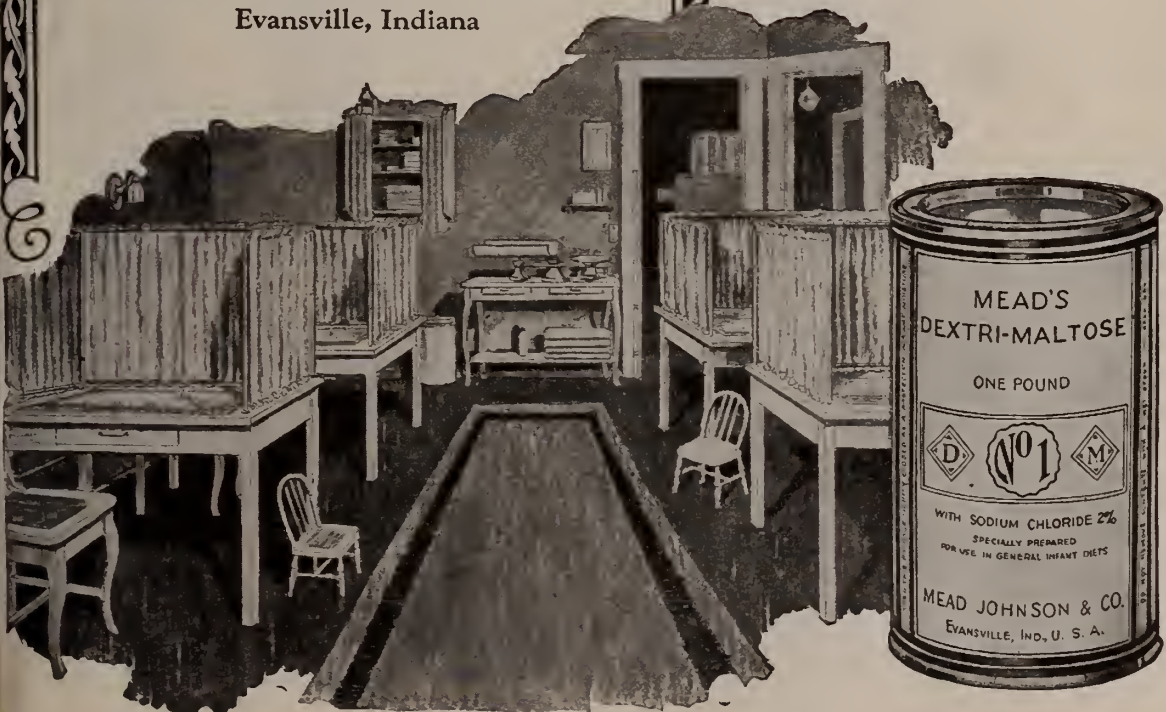
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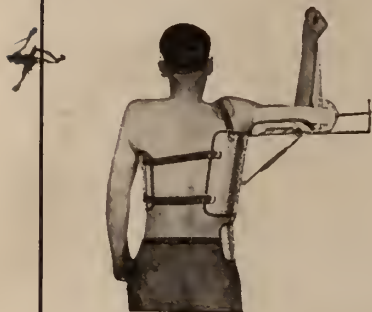


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# Illinois Medical Journal

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# ILLINOIS MEDICAL JOURNAL

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No. 2

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## Editorial

FROM THAT PATERNALISM THAT  
BREEDS A CITIZENRY INCAPABLE  
OF SELF GOVERNMENT THAT  
DEVELOPS FROM SELF-  
DEPENDENCY COMES  
CHAOS

TO DEAL WITH BIG BUSINESS AS BIG BUSINESS  
IS DEALING WITH THE PRACTICE OF MED-  
ICINE WOULD BE HOWLED DOWN IN  
LEGISLATIVE HALLS FROM WASH-  
INGTON, D. C., TO LONDON  
PARLIAMENT AS THE  
APOTHEOSIS OF  
SOCIALISM

American citizens who have grown up with the tenets of the Constitution of the United States, and whose patriotism is blessed with the eye of vigilance, regard with consternation the latest attempt of socialism to gain a menacing foothold on what has proven itself to be the most comparatively just form of modern government.

For democracy has justified itself in the prosperity and progress of the United States, a nation whose wealth has become the envy of greedy demagogues the world over. Of all the assets that the United States can lay claim to, none is more desirable than the almost perfect record of national health.

Now just as the worm eats at the heart of the apple and the city citadel is the target of an assaulting force, so is this splendid asset of national health become the crux of the battle for the socialists.

Through so-called "State Medicine" a system of alleged reduced medical service where the sick and ailing are led to believe that they are to have "something for nothing," socialism has found at last the gap for which it has sought for years.

Great Britain and many sections of continental Europe are groaning under the devastating

weight of the "panel system" of medical care by which the high standards once maintained in these various places are rapidly deteriorating to the worst medical service to be found existing under the flags of civilization. Doctors are pauperized. Patients are realizing that medical efficiency can not be bought for a trippence any more than a Rolls-Royce may be had for a dime.

The panel-system has not yet come to sit under the wing of the American eagle. But that this invidious decadence of one of the two noblest professions in the world is on its way has evidenced itself so plainly that even the blindest can read. The handwriting on the wall in this instance is the pay clinic. In this ramification of endowed foundations, universities and hospitals entering into the practice of medicine in direct and unfair competition not only with their own graduates, but with their own confraternity, the doors are thrown wide for the entrance of the panel-system and worse. This present generation may not feel the full penalty of the deterioration that of necessity must ensue. But to live for the day only has never been the ethics of these men consecrated to the pursuit and practice of the science of medicine. And the pity of the whole trend of things lies in the fact that it is not the ignorant, nor the uncharitable who are victims of the specious reasoning of socialism under the disguise of welfare but some of the brainiest, hardest headed business men in the community.

Men who give most liberally to these endowments are oddly enough, men who have wrested great fortunes by sticking so tenaciously to their one line of trade, and by repelling so violently any outside interference even from others in similar lines of business that this very concentration of purpose has made possible success and wealth.

To the average thinking physician it is a mystery how these same capitalists, having run their businesses to suit themselves, and after having learned the lessons of daily experience, should have the effrontery—for it is nothing less—to assume as the pastime for their later years the lay dictation of the practice of medicine. Oddly enough instead of endowing the profession itself, instead of spending these sums in a distribution of wealth that will make it possible for the present terrific cost of medical edu-

cation to be lowered, these well-meaning would be philanthropists are doing—as all ambitious yet misinformed persons are prone to do—putting the cart before the horse.

Medical economics can not be settled by outsiders any more than any physician can go into a great steel foundry, or department store or mail order business, or bank, and by distributing gratis building materials, or food, or clothing or farm and household implements, or remitting interest, or making ungauged loans solve the problems of big business. Yet the humanities involved in the practice of medicine are as calmly taken over and swept aside by the men of finance as if a fever could be cured by a sight draft on the Bank of England or the removal of a cancer be effected by a poultice of double eagles.

To deal with big business as big business would deal, ay, is dealing with the practice of medicine would be howled down in legislative halls from the District of Columbia to the Montreal and London parliaments as the apotheosis of socialism. Yet the very lines that big business and high finance lay about themselves in their doles to charity are ignored when it comes to dealing with any tangent on the humanities. Big business nor organized charity give nothing to the doctor. The doctor does not expect it. But why is it that through big business is patronized by county agents and welfare bureaus through the purchase of life's necessities, for charity medical services must always be donated?

Business says that charity must be given to the deserving poor only and then sets about drawing some very peculiar lines as to what is and what is not the "deserving poor." Chicago, the greatest medical center in the world, now faces a most quizzical proposition. Here is the promulgated plan for a new maternity hospital whose benefits are to be dispensed almost ad libitum among those families where the income is up to *five hundred dollars per month*.

Think that over. Go down to the office of the collector of internal revenue and note how large a percentage of Chicagoans earn as much as *three hundred dollars per month even*, and then figure up the answer.

Examine the books of any reputable physician and discover outside of those men whose trade is among the very wealthy and the ultra fashionable, what percentage of his patients are out of



the *two hundred dollar* a month class and how many there are whose weekly wage is in that average running between thirty and forty dollars per week.

A scheme to be sound must be sound all the way through. Unfortunately a motive may be so high that its foundation is merely a castle in Spain. It is sad to think of socialism entering the heart of a democracy under the wing of an institution that since its founding has been literally "built upon the rock."

Certainly in any family where the income is from \$3,000 to \$6,000 per annum a doctor should not be asked to give his services gratis unless the same system that brings forth this gift secures for the beneficiary a similar beneficence from cobbler, grocer, dairyman, tailor, and clothier. The chain store idea of medicine should be applied also to the farm, the factor, the bank, the tradesman.

Russia has been learning a sad lesson. "You scratch my back and I'll scratch yours" has not done much for the struggling people in the land that was once the Tsars. Russia has been learning the bitterness of a government that through ill-advised "gifts" instead of promoting the self-respecting habit of self-support teaches dependency, destroys self-reliance, and ultimately leads to belief in a socialistic state.

No good can come from a system of dependency. The state without a people of self-reliance, is a venomous, self-destructive instead of a self-constructive entity. Loss of initiative and a lack of a sense of responsibility unhinges the stability of any nation. From that paternalism that breeds a citizenry incapable of the self-government that develops from self-dependency comes chaos. The trend to dependency is dangerous, enervating, vicious. Recognition of this brought out the tremendous opposition waged so relentlessly against the child labor amendment some years ago.

---

TECHNICAL EDUCATION IS COSTLY;  
NURSES MUST LIVE, AND DOCTORS  
MUST PROVIDE FOR THEIR  
FAMILIES. THE DOCTOR'S  
LIVING FEE

*America*, a leading catholic magazine, in the issue of July 6, 1929, in a discourse on the present day problem providing medical care for

the poor and for persons in moderate circumstances make the following comment; we quote:

The problem of providing medical care for the poor, and for persons in moderate circumstances, has become acute. Speaking at the Atlantic City convention of the American Hospital Association some weeks ago, Mr. Edward A. Filene proposed as a solution the formation of medical guilds. These groups, consisting of about fifteen physicians, would make periodic examinations, for a moderate fee, and give necessary advice. This plan, he thinks, "will bring adequate medical care within the financial reach of every American, and, at the same time, insure a guaranteed income to the doctor."

Stated thus baldly, the plan has not much to recommend it. It leaves to many fields untouched. What of the cases which require immediate surgical care, or extended hospital treatment? "Speaking of Operations" is the title of a witty brochure; but in these days, the prospect of an operation is not calculated to awaken laughter. For many a man the choice is between an operation and death, and should he elect the operation, he also elects months of penury. This is not said in criticism of the medical profession. *Technical education is costly, hospital expenses show no decline, nurses must live, and doctors must provide for their families.*

A second plan is proposed by Dr. J. V. Fowler of Chicago, Ill. Under the plan, complete diagnostic and treatment facilities would be opened in a number of hospitals to all ethical practitioners. Physicians will be permitted to bring their patients for more thorough diagnosis, and for aid in the interpretation of diagnostic findings. "No one is to be refused treatment because of economic stringency." Cases calling for hospital care are to be assessed according to the ability of the patient to pay. Costs will be fixed by representatives of the services contributing to the treatment, after hearing the report of a social investigator.

Up to this stage, Dr. Fowler's plan does not differ greatly from the practice of reputable physicians and hospitals. The crises comes with patients unable to pay anything at all.

Here Dr. Fowler postulates outside financial assistance "until the work became so organized that it could carry itself." Many savings can be effected by careful intelligent administration



without lowering in the least the service given the patient. The only source of revenue indicated by Dr. Fowler is the "development of periodic health examinations of patients referred by physicians." Possibly, others might be found.

To quote a layman's view, it seems to us that while Dr. Fowler's plan deserves praise as an attempt to distribute the costs, it could not last long without a wealthy Maecenas. However, we should like to see it tried. "Undoubtedly the condition requires specific treatment," said Dr. Charles B. Reed, in his inaugural address as President of the Chicago Medical Society, on June 19, "and it may well be that Fowler's Solution, if not curative, may at least bring relief." As conditions now are, "the financial burdens of sickness," writes Mr. Filene, "cause almost as much suffering as the sickness itself." Yet—and this must not be forgotten — "the average doctor is rewarded with a ridiculously low return for the great service he renders the community." Something must be done, if State intervention is to be averted, the poor patient to be given the care he needs, and his physician guaranteed a living fee.

---

#### HOSPITALIZATION PRESENTS VEXING ECONOMIC PROBLEMS WITH IN- CREASING SCOPE AND EFFICIENCY

More and more does the idea gain ground among the American people that the place in which to receive proper care and attention during an illness is a hospital. From a shelter for the destitute, or an emergency station the cult of the hospital has emerged to a necessity almost as universally recognized as the telephone.

A New York statistician announced recently that more than sixty per cent. of all deaths in New York City occurred in hospitals. Even making due allowance for the percentage of deaths from accident in cases rushed to hospitals for treatment this is a solid indication of the development of patronage of hospitals by persons of means or established position who for many generations had the idea that a hospital failed to provide either the care or comfort in illness that might be had in the privacy of a home. The idea maintained that the better the home the better the care.

So squarely has the pendulum swung across

that nowadays the most luxurious home is only too frequently voluntarily abandoned for the hospital, since science, not luxury, is the *sine qua non* in the handling of illness or accident. Operations are practically never done any longer in the private home, though memory of hundreds of thousands of citizens harks back to the hour when the "kitchen table" was the first requisite for an operation. In large cities, of course, the economic and housing question have been a vital factor in effecting this increased hospitalization, the effect of which upon medical practice by individuals is yet to be forecasted. Housing and service problems—for the moderately well to do the servant question in the city is almost out of all bounds—have both forced and incited the hospitals to increase their capacity for private patients, to see that these patients had all the personal comfort obtainable in their homes, sometimes even more, coupled with a scientific efficiency of medical attendance and nursing care, almost impossible to attain in the home. Many hospitals exist, and those are assets to their owners, where only private patients are taken.

Public care of the sick has been raised at the expense of the taxpayer, or through the blundering good intentions of those misdirected philanthropies finding vent in heavily endowed foundations until it equals in almost every instance the finest of private service, in vitalities and essentials at least. Though hospitalization is only a higher exponent of the works of charity expended originally in many an Hotel de Dieu that the destitute might not want for ministrations from the hands of good samaritans it must be confessed that what with complexities such as the inroads of pay clinics, increased cost of nursing and other economic angles, increased hospitalization already shows signs of being a rose not altogether devoid of thorns.

At first all hospitals being charity affairs, private patients were admitted both to accommodate the visiting staffs and to add to the revenue of the institution, and it was not long before the discerning learned that in hospitals the persons who could not afford to pay anything for treatment were actually receiving better care than those to whom money was no object. Especially was this true of surgical cases.

Oddly enough both during the war and for a

considerable subsequent period there were marked decreases in charity wards of hospitals, as well as in the applications for the outpatient department. With the wane of war-prosperity, however, the business of the charity wards has again picked up.

Hospitalization of persons able and willing to pay for their services is always welcomed by physicians working in communities where reputable and open hospitals are maintained, though the closed hospital is always a debatable institution. On the other hand, in the last decade and a half the cost of caring for charity patients has doubled and more, through the necessities arising from improved laboratory and x-ray service; introduction of social service and the demand from the public for the installation of better nursing and better food and service. Hospital superintendents endeavor to shorten as much as possible the stay of patients, figuring with cause that convalescence can as well take place in a convalescent home as in a hospital. The modern hospital should not be a boarding house. It costs too much to run a good hospital and if in hospitals such efficient treatment can be given that stays therein can be shortened then this is both a significant and an healthy condition. For in diseases of mild character and obvious diagnosis where home treatment is cheaper for the patient and as serviceable, even if the community has to pay the doctor's bills, occurs still another phase of medical service that merits study. Ambulatory patients can, of course, be served at a clinic for the poor, or be treated in a physician's office.

If physicians will keep themselves up to date and so ally themselves that the hospital will be the physician's hand maid in the struggle of science against disease instead of an institutional dictator of the physician, there will be better leverage on the increasing problem of hospitalization and community service and less cause for complaint as made by some physicians that "the hospital is taking the bread out of our mouths." Adaptation and adjustment of the practice of medicine to new economic adjustments is making this transitional stage of medicine and its correlative adjuncts a condition calling for the exercise of profoundest judgment and most thorough investigation. At stake is the

future of medicine and the public weal, and in the tremendous area that must be covered hospitalization is only one angle.

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#### FINANCING HOSPITAL AND PHYSICIANS BILLS AT THE NORMAL RATE OF INTEREST

We had recently presented before the Chicago Medical Society what is known as the Smith plan for financing medical and hospital accounts. The Smith plan seems to meet with the approval of the attorney for the society as well as the officers. That the scheme is feasible is shown by the experience of the National City Bank of New York.

A year ago the rich National City Bank of New York opened up a department for loans without collateral security, to working folks who needed a hundred or a thousand dollars and needed it badly.

After a year, however, during which the National City bank has loaned over 16 million dollars in such loans, a report is made which shows amount of borrowers met their obligations promptly. The experience of the bank helps support the general conviction that most folks are honest. Most men and women take pride in making their word as good as their bond.

This great bank has helped more than 50,000 New York families by its small-loan policy. It helped a man finance a surgical operation for his son. It provided a waitress with enough money to bring her brother to this country from Germany. It freed many wage earners from the tails of the loan sharks. A third of the loans were for medical and dental service; 15 per cent. to pay debts and other loans; 14 per cent. went for home equipment, and 8 per cent. more for payments on homes; education took 5 per cent. The repayment plan, calling for regular savings accounts deposited from wages, was promptly followed by 97 per cent. of the borrowers, and legal action had to be instituted for the recovery of less than 1 per cent. of the total loans.

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Back numbers of the JOURNAL. We have requests from two different European libraries for the April, 1926, JOURNAL. Kindly communicate with the ILLINOIS MEDICAL JOURNAL, 185 N. Wabash Avenue, Chicago.



## INTERNATIONAL MEETING OF THE INTER-STATE POST GRADUATE MED- ICAL ASSOCIATION OF NORTH AMERICA

Detroit, Michigan, October 21-25, 1929.

For official program of the meeting communicate with Dr. W. B. Peck, Managing Director, Freeport, Illinois.

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## CONTROLLING SMALLPOX IN ILLINOIS COSTS TWENTY-FIVE DOL- LARS THE CASE

According to Dr. Andy Hall, director Department of Public Health, controlling smallpox in Illinois costs the State Department of Public Health twenty-five dollars per case. This sum includes the expenses of travel and salary for time of the field personnel involved in suppressing outbreaks of the disease. It does not imply that the state spends this amount on each separate case, but the grand total of all expenses incurred by the field personnel of the department in performing duties involved in suppression and control of smallpox averages up to \$25 the case.

During the first six months of this year 2,632 cases of smallpox were reported in Illinois. At \$25 per case this volume of smallpox has cost the department \$65,800. If prevalence continues at anything like the same rate throughout the remainder of the year, and this seems not unlikely, smallpox will have cost the State Department of Public Health more than \$130,000 for 1929.

Furthermore the minimum quarantine requirements of a patient suffering from smallpox is 21 days. Every case of smallpox requires the quarantine of at least 2 people. The 2,632 cases for the first half year caused, therefore, no less than 5,264 people to spend not less than 110,544 days in isolation. This amounts to more than 300 years of time.

Of course local health departments spend a good deal of time and money on smallpox and individuals not only incur doctor bills, but are compelled to lose time from productive pursuits.

Vaccinations at any price from \$1 to \$5 each seem cheap in comparison.

During the 10 years ending with 1928 Illinois had 30,441 cases of smallpox. At \$25 per case

this experience cost the State Department of Public Health no less than \$761,025. At 21 days per case for 2 people the number of days spent in quarantine was 1,278,522, a matter of 3,503 years.

In the Panama Canal Zone, where the population now stands at about 37,000, not a case of smallpox has ever developed. The requirements are that incoming residents must show evidence of successful vaccination within 5 years; that infants must be vaccinated at 3 months of age; that children must be vaccinated upon entering school and a 5-year intervals thereafter while in school. These requirements are strictly enforced and that leaves the Zone absolutely free from smallpox.

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## PRESIDENT'S ADDRESS — WOMAN'S AUXILIARY TO ILLINOIS STATE MEDICAL SOCIETY

MRS. G. HENRY MUNDT

CHICAGO

It seems proper at this time to give a brief resume of some of the incidents which have had a part in the organization of the Woman's Auxiliary to the Illinois State Medical Society. Two years ago at the meeting in Moline the House of Delegates passed a resolution approving a Woman's Auxiliary. Very late in the evening Doctors Chapman and Camp asked me if I would try to get a group of ladies together in the morning for the purpose of considering the organization of an auxiliary. As it was the last day of the meeting many had left, but Mrs. Chapman and I succeeded in bringing about twenty-five ladies together. An informal meeting was held and the doctors who were present suggested that a temporary organization be formed.

As the organization was only temporary the most that could be done was to try to interest the doctors and their wives and to organize the counties which desired an auxiliary. The first thing that was done was to send letters to all county presidents, secretaries and state councilors and officers asking their support and to assist by suggesting names of women who might be interested in organizing. This involved the sending of more than two hundred letters. The first request to assist in organizing came from Dr.



Peairs of Normal (McLean county). He invited me to Bloomington to talk at a luncheon at which time an auxiliary was formed. During my two years as president I have spoken in many counties and have organized eight of the counties out of thirteen which have organized, as well as six of the branches and the Central Auxiliary to the Chicago Medical Society. I have also had the pleasure of addressing the Southern Illinois Medical Association, the Secretaries' Conference, the Nebraska State Auxiliary, the Indiana State Auxiliary, the Minnesota State Auxiliary and giving the response to the address of welcome from the Minnesota State Auxiliary to the Auxiliary to the American Medical Association at the national meeting in Minneapolis.

I want to say that wherever I have appeared it has been without solicitation, with the exception perhaps of appearing before the Council of the Chicago Medical Society. I did talk to the Chairman of the Council and he did not favor an auxiliary very strongly. However, after a lengthy conversation he did say that I might state my case before the Council. I felt that I could not thrust myself into the midst of such an austere and formidable body all alone, so I asked Mrs. Hutton to accompany me, which she did. With fear and trembling I stated the objects of an auxiliary as I had conceived them. We were greatly pleased when we learned that the unanimous consent of the Council to organize had been given.

Then many letters were sent to the presidents and secretaries of the fifteen branches which comprise the Chicago Medical Society, and many telephone calls were made. Some responded very well and I talked at seven branch meetings. Three luncheon meetings were held at the Stevens Hotel in order to get as large a representation as possible from the branches before organizing the Central Auxiliary, which was duly organized. In June, 1928, during the time of the state meeting, a permanent organization was effected.

I can say that it has been uphill work and perhaps will be such until the doctors get behind the idea and give their whole-hearted support. Of course, we have not yet been in existence as a working organization long enough to justify our existence with some of the doctors and seemingly with many of the women, for it is still hard

to convince some that an auxiliary is worth while. You may not know it, but there were and I presume still are doubts in the minds of some of the doctors as to the value of an auxiliary. Usually, though, when education in medical economics is suggested and an explanation of the work is given which can be carried on in connection with this, a different viewpoint is gained. The editor of the *Indiana State Medical Journal* commented favorably on this idea in his journal after reading one of my articles which was published in the ILLINOIS MEDICAL JOURNAL.

Last week I delivered an address at the annual meeting of the Woman's Auxiliary to the Nebraska State Medical Society and I was gratified at the acceptance of my viewpoints as to the objects of an auxiliary.

I am sure that those who do not approve of the auxiliary have not considered just how far reaching our influence might be, and if they were to analyze some of the contacts which have been made they would be convinced that our effort as an organization is justified. We are still in a formative period. Our constitution is not complete but soon we can be guided in this regard by the first constitution of any consequence that the National Auxiliary has offered. Each state may draft its own Constitution and By-Laws. However, the National Auxiliary recommends that the states follow the By-Law regarding federation with other organizations. May I state here that I was misquoted in the *Auxiliary Bulletin* as to my idea of federation. I had expressed myself as not being in favor of it long before the controversy at the last national meeting. I should recommend individual memberships in the various large organizations, for I believe our work would be much more effective done in this way than as a group affiliation. Also I believe that only doctors' wives should be active members with power to vote, all others should be associate, for their viewpoints are many times different.

I am disappointed that more counties are not organized and that some of those which did organize are not functioning as they should. Since hearing some of the experiences of the six doctors who had to be hauled out of the mud on their way to attend a medical meeting, where I talked to the wives, I am not surprised that an interest

is lacking in some counties. We are such a different type of organization and somewhat limited in our scope so that we are bound to grope about for a while but I am sure that as we grow we shall find plenty to do. I do feel that we are building on a firm basis; that of education in medical economics. Until very recently we have had no money in our treasury, the first dues having just been paid. I have paid my own expenses and the Education Committee has been very kind in assisting by mimeographing, addressing, etc. The big question in the minds of most women is, "What can we do?" If the medical society will give the auxiliary plenty to do that will help to insure the success of the auxiliary.

I should like to tell you something about the work of an organization of this type as I conceive it.

I must admit that two years ago when I was elected president of the temporary organization, I had very vague ideas as to how we could operate. I looked over some literature which I had received concerning the work of the auxiliary in other states. I could not visualize these things as being the real work of an auxiliary. Some are endeavoring to establish health film libraries and these films are to be loaned to lay organizations, which is a splendid effort. Some of the other activities are work in health education, furnishing free milk and soup to needy children, furnishing awnings for country schools, establishing a first aid station at a country cross-roads where there are many accidents, sewing for hospitals, etc. I believe that a certain amount of this work is laudable and through it the auxiliary will gain the good-will of the people but I also believe that the doctors are already doing enough charitable work without their wives organizing to do more. As I said, I had very vague ideas in the beginning as to the work but after much thought and reading of medical journals many ideas presented themselves and those were mostly of an economic aspect. I think too, that I was saturated with the subject of medical economics, for I heard my husband talk so much about it, as I accompanied him on various trips throughout the state to talk to medical societies.

As you know medicine has never taken any definite stand in its own behalf, but now when

it is almost too late, some (not all) of the doctors are awakening to the fact that they are in the dawn of a new era in the practice of medicine and rather chaotic conditions prevail. Many are concerned over the prospects of State Medicine in the near future. Some men foresaw this situation but as Clarence Darrow says, "The progressive minority is usually a few jumps ahead of the more conservative majority," and so it was in this case and seemingly there are plenty of women in the conservative majority. You may ask: "What bearing or relation does the economic side of medicine have to the auxiliary or vice versa?" I think quite a good deal, for I feel that this is where our real work lies. But first, we must enlighten ourselves as to some of the problems which are of such vital importance to medicine.

A few of these problems are foundations and corporations practicing medicine; universities practicing medicine in competition with their graduates, as well as with those from other schools; abuses of medical charities; County Boards practicing medicine; medical legislation. Various bills are introduced at sessions of the legislature which affect the practice of medicine and which would affect the public even more if passed, but fortunately the citizens are protected to a great extent by the activity of the medical profession. Such bills as the Anti-Vivisection Bill, State Medicine and the Sheppard-Towner Act which is just one step further toward a Bureaucracy which is developing too rapidly in this country. I am ashamed to admit that some lay women know more about these questions than do the doctors' wives. I should like to have time to tell you how the grain business has suffered under this sort of legislation.

How can we help? Our auxiliary can act as a buffer between the profession and the laity. We can convey the proper viewpoints of organized medicine to the general public in regard to some of these problems. In speaking of organized medicine we do not mean a union, but members of an ethical medical society. We can carry on work where it might be unethical and even impossible for the doctors themselves to do so. We can do this work both as an auxiliary and as individuals and the work will dovetail with that of other organizations to which we belong.

In a list of suggestions which was printed in



the ILLINOIS MEDICAL JOURNAL of March, 1928, I suggested that there were many ways in which we could convey the viewpoints of organized medicine through our Women's Clubs. Also that the clubs to which members belong should be listed after their names so that when anything of importance is to be done they may be notified quickly. They should really form a small unit in their clubs. I do not mean another organization, but know one another so that they can stand together in any event. If literature is to be sent to a club they can prepare the soil or do some follow-up work because if anything is sent which is against the general policy of that organization, no consideration will be given to it unless it is fostered by a few members.

We know the influence which endorsements sent from Women's Club have upon legislators and individual letters have their influence as well. The legislative committee of the Illinois State Medical Society informs its members as to impending bills and requests that they get in touch with their legislators. Our president and legislative chairman could be placed on that list so that we would receive notices and if the medical society considered it advisable, we could act with their guidance. Of course, no work of this kind should be carried on without the sanction and direction of the medical advisory council.

A legislator's wife informed me that the legislator does not always realize that an endorsement from an organization perhaps represents only a small percentage of the membership. In a club whose membership is eight hundred fifty these bills are discussed and usually endorsed at business meetings which are usually poorly attended, and I dare say that many of those present do not know what they are sanctioning. We know that when the Board of a Club recommends anything it is very difficult for a lone individual to rise and talk against it unless she knows she will have some backing. If our members are enlightened as to some of these bills which are discussed or indorsed in Clubs they can take a stand on them and know that they will have support. It is surprising to find that so many doctors' wives do not know what the Sheppard-Towner Act is after all these years and more surprising to know that most of them voted for the endorsement of this bill in their clubs. The State Auxiliary recently sent out pamphlets on

this bill to the membership with a letter enclosed advising them to acquaint themselves with it. If we did nothing more than to enlighten our members as to the dangers of this one bill, we would have accomplished much. I should like to relate two instances of how endorsements were defeated through the courage of one woman and the work of another. In a large club when an endorsement was about to be voted a physician's wife spoke against it and then many rallied to her support and the endorsement was defeated. Only the proponents of this bill were being heard in most clubs and another woman finding that she could change the sentiment of the club by passing literature which gave very good reasons for opposing it, used her influence in having incorporated in the By-Laws of that club that both sides of any question must be presented before an endorsement is given. Would it not be a good idea for auxiliary members to see that their clubs incorporate this same idea in their By-Laws?

We should see that these presentations are made by reputable speakers. We should know that any speaker who comes to our club has impeccable credentials. Why? Because too many speakers are coming to our clubs with an ax to grind and too many who could not stand investigation. Just recently upon two different occasions a man represented the Anti-Vivisectionists at meetings of one of the large federated clubs. If you wish to know his record read the *Journal A. M. A.* of April 27, 1929, page 1469. I ask you to do this and see whether you think as I do that it is a pity that our women's organizations will tolerate a speaker of this kind and that they believe as they evidently do that a man of this type represents the medical profession. Then we have certain food fakers posing as diet experts. Sometimes these men are financially interested in the concern whose products they recommend. Many large concerns are putting on advertising campaigns and they always use the health appeal. Why don't we recommend having physicians to speak instead of their speakers? There are many so-called psychology talks which are merely Christian Science talks. If that is what is wanted it is all right, but have that title given to them. Chiropractors are sometimes scheduled. The Illinois State Medical Society furnishes speakers gratis to any organization on any health subject. Just recently I



have been able to recommend to four clubs that they use these speakers. I have always advocated the use of many of these speakers for our own auxiliaries with open meetings to interest our lay friends in some of the viewpoints of the profession. A tea and some interesting subject such as "Heroes in Medicine" is one of many which might be suggested and the speakers tactfully digress and get over the idea in some way that our clubs in their willingness to help humanity fail to see the paternalistic side of certain movements. We can spread the information that they are fostering paternalism as well as to convince our club women that they have been made the dupes of charitable organizations and social reformers. There are many misdirected women lobbying for measures of various kinds who would oppose them just as strongly if they could in some way get the proper viewpoint.

The Illinois State Medical Society will also furnish authentic health news which should replace the columns which are written and syndicated by a physical culture graduate. One auxiliary was responsible for the discontinuance of this column in a newspaper. Health articles to be read by members of clubs may be obtained. Would it not be a good idea to replace the "Physical Culture" magazine on the doctor's reception room table with Hygeia? I understand that this may actually be found among some doctors' magazines.

Again we must be enlightened so that we can defend the profession when we hear them maligned. We know that there is not another profession as self-sacrificing and which does as much for charity. But they do object to charity running riot and bringing about a condition which will be as disastrous for the public as it will be for the medical profession. I refer to State Medicine. I understand that there are trust funds for the benefit of mankind which amount to between one and two billion dollars. This benefit is usually interpreted as meaning medical charity. What a help it would be toward paying the doctor's bill if mankind could be relieved of buying shoes, milk, etc., but these funds do not do that. Inquire into the high cost of medical care and see for yourself where the trouble lies. It would be better to speak of the high cost of being sick and consider whether it is the doctor's fees that have increased so much

or whether it is not other features in which the doctor has no financial interest. But how many doctors' wives even stop to think that the doctor is not actuated by selfish motives but working for the protection of the public just as much or more than for himself when he fights the drugless healer and various other bills as well as various charities which are contributing factors to State Medicine?

Read the Medical Journals. Some of the editorials and correspondence will interest you if you are at all interested in the future of medicine. I believe that most of us are, who have husbands or sons. The advisory council feels that if the ILLINOIS MEDICAL JOURNAL is read no circularizing will be necessary as that is quite expensive. Also, through the courtesy of the editor, auxiliary news will be printed.

Place your members in strategic positions in their various organizations. Again if time permitted I should like to mention several interesting experiences which were had by our members, who were members of club boards, for I know that these would demonstrate the possibilities of this organization. Other forces are very well represented in our clubs.

In your clubs or at the polls know whom you are putting into office. Know whether they are friendly to medicine. Many politicians as well as some club officers are not in sympathy with the high standards of the medical profession.

Have your friends know that the American Medical Association and the Illinois State Medical Society broadcast daily health talks.

I have been told that the auxiliary increases the attendance at many medical meetings when held on the same day, women urging their husbands to go so they may attend the auxiliary meeting. I am bold enough to hope that through interesting the women in some of the serious problems of medicine that we may interest some doctors who have been indifferent. We know that the auxiliary promotes acquaintance and friendship among physicians' families.

As I said, we can do much as individuals in spreading information as to the right viewpoints of organized medicine instead of allowing some of the fallacious ideas which are constantly being foisted upon the public to go unchallenged. We all have contacts which the doctor would never have and there is no estimating as to how far-reaching the influence might be from some

seemingly unimportant contact. In talking casually to people about the attitude of the profession on various questions I find many willing listeners.

As an auxiliary we can be a power if we enlighten ourselves as to the problems of medicine. Our influence probably will not be felt greatly in the beginning but as the constant dripping of water wears away a stone so will our propaganda have its influence in time. It is discouraging to be met with the question as to why the doctors' wives should be so interested when there is such apathy on the part of some of the doctors. The only reply that I can make to such a question is that the training of a medical man has been such until very recently that he knew nothing of his economic relation to society, for he has been much interested in the scientific aspect of medicine and in eking out a modest living, consequently, he has never appreciated the importance of the relation of the scientific side to the economic side of medicine. Of course, we do have to admit lethargy on the part of some. But why, because of this lethargy should the women be disinterested and not organize?

The fact must be recognized that women's organizations have much power and that women are occupying very important places. Lady Astor said, "I don't say that women will change the world, but I do say they can if they want to." We can do much in molding public sentiment.

I can liken this organization to an orchard. If we have good soil, good trees and good cultivation we have an excellent orchard. If we have good strong organizations built on a firm basis with good active members and the guidance of the doctors our auxiliary will bear splendid fruit.

7000 South Shore Drive.

### Correspondence

#### THE ENCROACHMENT OF FREE CLINICS

Paris, Ill., June 29, 1929.

*To the Editor:* The recent agitation in Chicago, concerning free clinics and the publicity methods employed by some of them, prompts me to comment again upon the present position of so-called clinics in general.

Thirty years ago free clinics were the adjuncts

of hospitals and medical colleges, and the private clinic was unknown. Even then the free clinic was often taken advantage of by impecunious people who were amply able to pay; but on the other hand, the struggling young clinician was sometimes enabled to add to his meager income by adroitly converting such applicants into private "pay" patients. These clinics were advertised entirely by their loving friends, and their competition with the private practitioner was negligible.

Later, from a small beginning in a small northern town, the quasi public, but really private, clinic was evolved. It proceeded along ethical lines, and had the endorsement and cooperation of the profession, and so became a court of last resort, to which were referred obscure and difficult cases. The success of this institution inevitably inspired the formation of similar combinations of doctors in our large cities, and gradually in cities of even the third and fourth classes. And inevitably with the multiplication of these clinics abuses crept in. While most of them have kept nominally "within the law" of ethics, many of them have become more or less commercialized in their methods of handling patients and seeking publicity.

They do not advertise through the press directly. They still cling to the Mellins food idea, but they resort to every possible method to secure, and propagandize through, loving friends.

Their members contribute to, and are freely quoted by the lay press. They lecture to the public, and are not at all diffident in referring to the accomplishments of their clinics, especially in the matter of percentages of cures.

A few years ago I heard a prominent associate of a big clinic address a medical society on the subject of goiters. The general public was incidentally invited to be present. And the general public, knowing the speaker's worldwide fame, came. The lecture was delivered to the medical society, but *at* the general public. It was, indeed, elementary as to scientific value, but expert in the presentation of statistics of cures at the clinic. Within the next few weeks, needless to say, there was an exodus of goiter cases from that city to the big clinic.

Such publicity stunts are, of course, within the law. So, perhaps, are the boosting of clinics in railroad timetables, and unpaid for write-ups



in magazines and newspapers. But in effect they are no different from frank commercial advertisements in the press, except, possibly, they are more insidious.

But perhaps the worst feature of modern clinics, especially the lesser ones, is their attitude toward the general practitioner whose patients seek their help; and their tendency unnecessarily to "clinicize" to the limit every casual case that falls into their hands. The patient referred by the meek, long suffering, but well meaning, and possibly quite competent country doctor, is diagnosed to his finger-tips (thereby being profoundly impressed), and at once put upon a course of treatment, with instructions to return at a certain date. Perfunctorily sometimes the family physician is advised as to the findings in the case, but there is an air of aloofness and an assumption of arrogance in the clinician's attitude that does not add to the family physician's self-esteem, nor to the esteem of his patient.

A patient with a simple ailment is frequently seized upon and put through an entirely unwarranted and superfluous process of tests and examinations. Everything, indeed, seems to be grist that comes to these mills. Thus, recently I sent a patient with a slight nasal affection to a specialist in a neighboring third-rate city, with a request to look after her nose. On her return I learned that she had been unwittingly set upon, as it were, and put through the clinic of which the specialist happened to be a devoted member. She had been x-rayed, gastric-lavaged, Wassermannized, psychoanalyzed, catheterized—and all but hypnotized. The results were all negative. But she had to pay. She was indignant. So was I. It looked as if she had been frankly "gypped."

But, on the other hand, many patients are so impressed by the painstaking "thoroughness" of these methods that they never cease to brag about it to their friends, and never cease to harbor the feeling that the family physician (who knows their history so well he does not need to psychoanalyze or Wassermannize them and is too conscientious to pretend that such absurd and expensive thoroughness is necessary) is a superficial and careless sort of M. D.

Insurance companies know their business pretty

well. They require, as a routine, the testing of the vital organs, the taking of blood pressure and urinalysis. If their examiner happens to find a hypertrophied turbinate, they do not demand an electrocardiogram, a spinal puncture, nor a cystoscopy. And when a simple case comes to one of these clinics and is "run through," it is done obviously for one of two reasons—either to obtain a large fee, or to make an impression upon the patient.

And so we country doctors, while vicariously deploring, with our city brethren, the encroachment of free clinics and the menace of state medicine, have other grievances. We should like to see all the clinics confining themselves to their proper sphere, without advertising, surreptitious or otherwise, and without a greedy eye upon the possibilities of the patient's purse. And, when practicable, as it usually is, we should like to have our patients returned to us for treatment, and returned with their respect for, and confidence in their family doctor unimpaired.

E. O. LAUGHLIN, M. D.

## PROGRAM STATE MEDICAL SOCIETY OF WISCONSIN, SEPTEMBER

11-13, 1929

The eighty-eighth annual meeting of the State Medical Society of Wisconsin will be held at Memorial Union Building, Madison, September 11, 12 and 13. Members of the Illinois State Medical Society are cordially invited to be guests at the meeting.

The program is as follows:

*Wednesday, September 11*

8:00 A. M.

Registration.

9:00 A. M.

Wisconsin Laws and Legal Rulings as They Pertain to Practice of Medicine—Fred M. Wylie, Attorney at Law, Madison.

The Doctor and His Collections—Prof. Robert R. Aurner, Department of Business Administration, School of Commerce, University of Wisconsin, Madison.

Opportunities and Trends in the Practice of Medicine—Dr. Olin West, Secretary and General Manager, American Medical Association, Chicago.

Fat Embolism—Dr. E. A. Miloslavich, Milwaukee.

2:00 P. M.

Bronchoscopy—Dr. Wellwood M. Nesbit, Madison.  
Subject Later—Dr. F. C. Rodda, Associate Professor of Pediatrics, Minneapolis.



Sterility—Dr. Roland S. Cron, Milwaukee.

Prostatic Obstruction—Dr. Herman Kretschmer, Assistant Clinical Professor of Surgery, Rush Medical College, Chicago.

*Thursday, September 12*

8:30 to 9:45 A. M.

Room A

Spinal Anæsthesia—Dr. Ralph W. Waters, University of Wisconsin, Madison.

Room B

Neuro-Syphilis—Dr. Wm. F. Lorenze, Professor of Pediatrics, University of Wisconsin, Madison.

Room C

Pernicious Anemia—Dr. Wm. S. Middleton, Associate Professor of Clinical Medicine, University of Wisconsin, Madison.

Room D

The Value of Sympathetic Ganglioectomy and Trunk Resection in the Treatment of Raynaud's and Allied Vascular Diseases—Dr. A. W. Adson, Assistant Professor of Surgery, Mayo Clinic, Rochester.

9:45 to 11 A. M.

Room A

Use and Abuse of Forceps—Dr. John Harris, Professor of Obstetrics, University of Wisconsin, Madison.

Room B

Cardiac Decompensation—Dr. Francis D. Murphy, Assistant Clinical Professor of Medicine, Marquette University, Milwaukee.

Room C

Massive Atelectasis of the Lungs—Dr. F. J. Hirschboeck, Duluth.

Room D

Nephritis—Dr. Ralph Major, Professor of Medicine, University of Kansas, Kansas City, Mo.

11:00 A. M.

The Normal and the Diseased Heart—Dr. John H. Musser, Professor of Medicine, Tulane University, New Orleans, and President, American College of Physicians.

2:00 P. M.

President's Address—Dr. K. W. Doege, Marshfield Clinic, Marshfield.

Gynecological Subject—Dr. Harold O. Jones, Chicago.

Use of Pituitrin—Dr. Warren E. Leaper, Green Bay.

Goitre—Dr. A. L. Mayfield, Kenosha.

Subject later—Dr. Hary Wahl, Dean of School of Medicine, University of Kansas, Kansas City, Mo.

7:00 P. M.

Annual Dinner (Informal)—Great Hall, Memorial Union Building. This dinner is given to honor this year all past presidents of the society. Speaker of the evening—Dr. William Allen Pusey, Past President, American Medical Association.

Problems in the Corporate Practice of Medicine.

*Friday, September 13*

9:00 to 10:30 A. M.

Room A

Treatment of Trophic Ulcers and Other Nervous

Diseases by Alcoholic Injections—Dr. C. F. McClintic, Detroit.

Room B

Hematuria—Dr. J. C. Sargent, Professor of Urology, Milwaukee.

Room C

Oxygen Treatment of Pneumonia—Dr. John Pink, Milwaukee.

Room D

Pediatric Clinic—Dr. Francis S. Smyth, Washington University, St. Louis, Mo.

10:30 A. M. to 12 M.

Room A

Thyroid Disorders—Dr. Arnold S. Jackson, Jackson Clinic, Madison.

Room B

X-Ray Diagnosis of Duodenal Ulcer—Dr. Charles G. Sutherland, Mayo Clinic, Rochester.

Room C

Diabetes—Dr. C. C. Edmondson, Waukesha.

Room D

X-Ray in Neurosis—Dr. Frank W. Mackoy, Sacred Heart Sanitarium, Milwaukee.

Room E

Subject and speakers to be announced.

2:00 P. M.

Address by the President-Elect—Dr. Frederick J. Gaenslen, Milwaukee.

Subject later—Dr. Joseph Barcroft, Professor of Physiology, Cambridge University, Cambridge, England.

Subject later—Dr. Herman F. Derge, Eau Claire Clinic, Eau Claire.

Annual Oration in Surgery—Dr. George Heuer, Professor of Surgery, University of Cincinnati, Cincinnati.

### PRIZE FOR GOITER RESEARCH

The American Association for the Study of Goiter will award a prize of three hundred dollars (\$300.00) and a medal of honor to the author of the best essay based upon original research work on any phase of goiter, presented at their annual meetings at Seattle, Wash., in September, 1930.

Competing manuscripts must be in the hands of the Corresponding Secretary by July 4, 1930, so that the award committee will have sufficient time to thoroughly examine all data before making the award.

Full particulars of other regulations governing details of the offer will be furnished on application to Dr. J. R. Yung, Corresponding Secretary, Terre Haute, Ind.

### AMERICAN COLLEGE OF PHYSICAL THERAPY

CLINICAL CONGRESS AND THE EIGHTH ANNUAL MEETING, November 4, 5, 6, and 7, 1929, Hotel Sherman, Chicago

Chicago has again been selected as the annual meeting place for the clinical congress of physical therapy of the American College of Physical Therapy. The consensus of opinion of the many representatives, who

have attended the sessions in the past few years, is that Chicago offers the most attractive features for a large medical gathering. Convention facilities are unsurpassed. Chicago as a medical center needs no apology. The experience of those who have attended any of the previous conventions speaks well for a highly successful 1929 Clinical Congress.

One of the novel features to be inaugurated this year is the clinical part of the program. One-half of each day will be devoted to a variety of clinics in the sections on Medicine, Surgery and allied specialties, and Eye, Ear, Nose and Throat. As in the past, there will also be a joint meeting of all sections for the presentation of numerous addresses of interest to all physicians irrespective of their specialties. Education in physical therapy will be thoroughly stressed, as the time has come when this phase of the subject must be given due emphasis by an organization such as the American College of Physical Therapy. Scientific papers, clinical addresses, demonstrations of technique, and scientific and technical exhibits, will comprise the remainder of a scientific program which merits the attention of all those interested in the newer fields of medicine. Attendance at the congress is not limited to the fellows of the College, as all duly licensed physicians, their technicians and assistants, properly sponsored, are cordially invited to attend all the sessions.

Program and other information may be obtained by writing to the Executive Offices, American College of Physical Therapy, Suite 716, 30 N. Michigan Avenue, Chicago, Ill.

## CHICAGO ROENTGEN SOCIETY

### RESOLUTIONS

WHEREAS, the storage and preservation of used x-ray films has recently become an economic and insurance problem, and

WHEREAS, the reports of the roentgenologists responsible for the diagnoses are of decidedly more value and importance than the films, and

WHEREAS, these reports are filed with, and become a part of the records of each case, making it unnecessary that large numbers and quantities of old and used x-ray films be preserved and retained for long periods of time, it is therefore,

RESOLVED, by the Council of The Chicago Roentgen Society, acting officially for The Chicago Roentgen Society, that it is the sense and judgment of this Society that it is not necessary to preserve any x-ray films for a longer period than two years after their exposure, and that in all cases where there is no likelihood of legal proceedings—such as ordinary clinical cases, medical conditions, gastro-intestinal and urinary tract examinations—it is deemed unnecessary to preserve or retain the x-ray films for a longer period than six months after their exposure.

This is, however, not in any way to be construed as discouraging the preservation of films of specially interesting or unusual conditions, as these are to be preserved because of their value for comparative study and for teaching purposes. And it is further

RESOLVED, that referring physicians desiring to preserve the x-ray films of their own patients, be encouraged to do this, and it is hereby declared permissible and proper practice for roentgenologists to deliver the films to the referring physicians in such cases; and it is further

RESOLVED, that a copy of these Resolutions be sent to The Bulletin of The Chicago Medical Society, THE ILLINOIS MEDICAL JOURNAL, The Journal of the American Medical Association, Radiology, and the American Journal of Roentgenology, for publication, and to the American College of Radiology, the American College of Surgeons and the American College of Physicians with request that the same be published in their official journals, and to the Sections on Radiology of the American Medical Association and of the Illinois State Medical Society, and to the Chief of the Fire Prevention Bureau of Chicago and the Underwriter's Laboratories, Inc., of Chicago, and to the editors of Hospital Management and Modern Hospital.

### A DANGEROUS OPERATION

Patient (nervously): "And will the operation be dangerous, doctor?"

Doctor: "Nonsense! You couldn't buy a dangerous operation for forty dollars."

### A REAL COOK

Adele: "Alice worships her husband, doesn't she?"

Mildred: "Well, she places burnt offerings before him three times a day."—Hookless Scoop.

### BUSINESS CLASSIFICATION

Miss W.: "How would you classify a telephone girl? Is hers a business or a profession?"

Mr. P.: "Neither. It's a calling."

### NOT PARTICULAR

"Ha, Baron Flagg-Rush, you're coming to our affair tonight, aren't you?"

"Don't see how I can, Mrs. Goitre—you see, we've got a case of diphtheria in the house."

"Well, bring it along, Baron—we'll drink anything!"

### FOR PROTECTION ONLY

A motorist was held up by a traffic policeman.

"What's your name?" demanded the cop.

"Abraham O'Brien Goldberg," replied the motorist.

"What's the O'Brien for?" asked the officer.

"For protection," returned Abraham.

### BY A STROKE

Press Interviewer—How did you acquire your fortune?

Poet—At a single stroke.

"Of your pen?"

"No; of my paralytic uncle."



## Original Articles

### THE MIMICRY OF THE SYMPTOMS OF PEPTIC ULCER.\*

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The symptoms of peptic ulcer may cover a wide range, and are not infrequently vague and indefinite. They depend to some extent upon the type of ulcer, its location and the characteristics of the individual who possesses the ulcer. The symptoms of a peptic ulcer anywhere usually follow in a general way those of a duodenal ulcer. The symptoms of duodenal peptic ulcer may be described under three broad types. In all of them there is a tendency toward latent periods with comparative comfort, followed by an exacerbation of symptoms that occurs more frequently in the spring and the fall.

*Symptoms of Peptic Ulcer.* In the first type, the chief complaint is the so-called hunger pain, coming on two to four hours after meals in duodenal ulcers, and sooner in gastric ulcers. This pain is usually relieved by food, soda, gastric lavage or vomiting. The patient sometimes awakens early in the night with pain, which ceases after taking alkalis or milk and crackers. This condition lasts from six weeks to several months, alternating with periods of comparative freedom from symptoms.

In the second type the prominent symptom is hemorrhage. The patient may apparently be in good health when hemorrhage suddenly occurs, with vomiting of blood and with tarry stools. Tarry stools and anemia may constitute the only symptoms.

In the third type there are no definite gastric symptoms, but discomfort in the lower part of the abdomen and sometimes a tendency toward diarrhea. The appetite is poor and there is loss of weight.

These three types of symptoms of peptic ulcer may occur separately or combined. The first and second are commonly associated.

Though these three types or combinations of types cover most of the cases of peptic ulcer,

there are occasional instances in which a peptic ulcer produces very confusing symptoms.

For example, Mr. A. K. P., aged 34 years, had a history of having had several previous attacks of what appeared to be kidney colic on the right side accompanied by vomiting. A few hours before admission to St. Elizabeth's Hospital, October 29, 1924, he suffered a very marked attack, which began with pain in the upper right side and concentrated around the region of the right kidney. There was a slight general abdominal pain and tenderness. The urine was cloudy and contained some albumin and a few leukocytes. Cystoscopic examination was negative. The following day the pain seemed to locate in the right iliac fossa, and his appendix was removed. It was swollen and congested. The tissues around it were edematous, particularly around the mesentery of the cecum and ascending colon. A drainage tube was inserted. The appendix contained some pus. Five days after this operation duodenal and stomach contents appeared through the drainage tube. There was but little pain or muscle spasm in the epigastric region. On November 6 an incision was made through the inner portion of the upper right rectus muscle. The duodenum anteriorly was slightly adherent and showed a few lymph flakes, but in the posterior wall there was marked infiltration. The pylorus was occluded with a kangaroo tendon and a posterior gastroenterostomy was done. The patient died on November the ninth. Post mortem examination showed the right kidney floating in foul liquid containing duodenal and stomach contents. There was a large ulcer in the posterior duodenal wall, which had perforated retroperitoneally. The duodenal contents had gravitated around the kidney and in the region of the appendix. The symptoms were at first of kidney colic, and later were the symptoms ordinarily found in appendicitis.

The symptoms of kidney colic and the symptoms of appendicitis can, therefore, be caused by the perforation of a posterior duodenal ulcer.

It is, however, the mimicry of the two conspicuous symptoms of peptic ulcer, hunger pain and hemorrhage, that chiefly concerns us, and in order to comprehend the mimicry we must consider the cause of these symptoms in ulcer.

*Hunger Pains.* Hunger pain in peptic ulcer, particularly in duodenal ulcer, has excited much interest. The work of Cannon and Washburn in 1912 first established definitely that hunger pains in a normal stomach were due to contraction of the gastric muscles. This was ascertained by placing an inflated balloon in the stomach and connecting it by a tube with another balloon emersed in water from which tracings were made on a kymographic drum. The patient indicated when the pains occurred, and

\*Oration in Surgery before the 79th Annual Meeting of the Illinois State Medical Society, at Peoria, Ill., May 22, 1929.



they coincided with the contraction on the balloon in the stomach. Carlson and his associates have elaborated this work and confirmed the original findings of Cannon and Washburn.

The so-called pangs of hunger accompanying a contraction of the stomach show alternating periods of quiet and activity. In investigating the pain of peptic ulcer it was assumed that it was probably an exaggeration of the hunger pains which might occur in a normal stomach. There is extensive literature on this subject, much of it contradictory. A. J. Carlson, H. Ginsburg, W. W. Hamburger and others believe that the pain in duodenal ulcer is due to contraction of the gastric muscles, though the contractions are not usually as deep or powerful in patients with ulcer as in the hunger pains in a normal stomach. B. B. Crohn and A. O. Wilensky, W. L. Palmer and others found that there was no particular gastric contraction in about one-fifth of their patients with peptic ulcer. Reynolds and McClure also found that there was nothing unusual in the gastric and duodenal peristalsis in many of their patients with peptic ulcers. C. W. McClure thinks that as motor abnormalities accompanied pain, and also occurred without pain, both may be due to some common cause. He regards the subject as still indefinite.

It has been shown that when there is unusual contraction of the pyloric portion of the stomach, frequently the duodenum also contracts abnormally. Hunger pains apparently are timed more accurately with contraction of the duodenum or jejunum than with contraction of the stomach, and the tone of the duodenum often rises and falls in coordination with the stomach. Distention of the duodenum is thought by C. M. Jones, of Boston, and others, to cause hunger pains.

An interesting observation by Payne and Poulton showed that apparently there are hunger contractions in the esophagus, and this suggests the possibility that at least some of the pain in peptic ulcer is caused by spasm of the esophagus.

The theory of production of pain by excessive acid in the gastric juice has also stimulated much discussion. A few investigators have been able to increase the discomfort of patients who had an active ulcer by introducing dilute hydrochloric acid into the stomach through a tube. Others

have found that the introduction of acid in these patients merely produced a mild burning sensation but not the typical so-called hunger pains (Alvarez). It has been noted, too, that patients with low hydrochloric acid content or even without free acid in the gastric juice have been subject to typical hunger pains.

An important factor has been emphasized by Palmer, who has shown that much depends upon the irritability of the ulcer. Thus, if the duodenal and gastric mucosa is normal, the ingestion of 100 to 200 c. c. of 0.5 per cent. hydrochloric acid causes no symptoms, while symptoms are produced if the ulcer is active, the administration of acid often bringing on a typical attack of pain which is relieved by the usual methods of administration of soda or washing out the stomach. However, in all cases of active ulcer this does not occur, so causation of hunger pain by increased acid does not hold for every case. Ivy has shown that, while normal mucous membrane of the bowel is insensitive to ordinary traumas such as clamping or cutting, when it becomes congested and edematous pinching or cutting causes pain and sometimes vomiting. He believes that the intermittent pain of ulcer is due to changes in tone of the muscles at the site of the ulcer, and is produced by local spasm, while continuous pain is due to congestion or swelling around the ulcer from the inflammation.

The important point in these observations seems to be a lowering of the threshold for the stimuli of pain in the nerve endings of the stomach and duodenum. This increased sensitiveness of the sensory nerves is, of course, a common occurrence where the sensory nerves are more abundant, as in the skin. Inflammation in the skin of the hand, for example, will cause even a slight pressure to give pain. So in the stomach or duodenum the inflammation around the ulcer appears to lower the threshold for the stimulation of the sensory nerves; consequently, normal peristalsis without markedly accentuating the local spasm around the ulcer will be painful. In some cases of peptic ulcer acid may not only increase the sensitiveness of the gastric or duodenal sensory nerves which normally are not exposed to acid because they end in the muscular or submucous coats, but may in this condition actually cause pain. If, however, the threshold for painful stimuli is about normal, the spasm

and the excessive acid are without painful effect.

It is commonly known that many external lesions follow this general course. The sensitiveness of a callous or corn may vary even though the corn itself remains apparently unchanged. It is known, too, that there are occasional cases in which the gastric mucosa is intact and yet so-called hunger pains supposed to be typical of peptic ulcer occur and are relieved by soda or by emptying the stomach.

In pylorospasm, which, as Hughson has shown, may be caused by irritation anywhere within the peritoneal cavity, there doubtless follows a congestion. If the pylorospasm is excessive and prolonged there may be a hypertrophy of the involved muscle. Hyperemia accompanies increased muscular activity. The hyperemia may accentuate the sensitiveness of the gastric and duodenal nerves even though the mucosa is intact, and the same mechanics of hunger pains would thus occur from pylorospasm as from ulcer. This seems to be the best explanation of the mimicry of hunger pains by extragastric lesions.

Doubtless the tug of a duodenum on an adherent gall-bladder causes irritation of the duodenum and pain by the pull on the gall-bladder, which in its turn may also produce pylorospasm. The duodenum has a rather limited range of motion and any interference with this range is more likely to be resented and to produce symptoms than where the range of motion is free and meets with but little impediment. In the transverse colon or in the jejunum and ileum adhesions that do not produce obstruction usually give no symptoms, but adhesions about the pylorus or duodenum or about the ileo-colic sphincter, where motion though essential is more limited, will often give discomfort or pain. In the same manner adhesions about the heart where the motion is essential but limited may produce marked symptoms.

*Hunger Pains from Extra-Gastric Causes.* Dr. W. H. Higgins, of the Medical Department of St. Elizabeth's Hospital, Richmond, Virginia, in an excellent paper on hunger pains, reviews 162 consecutive abdominal operations at St. Elizabeth's Hospital in which there seemed to be some symptoms of disturbed digestion. His analysis is as follows:

In order to determine the relative frequency of this

symptom [of hunger paid or food relief] in the more common abdominal diseases, an analysis of 162 clinical histories has been completed. This record comprises all patients with peptic ulcer, chronic cholecystitis and chronic appendicitis operated on at St. Elizabeth's Hospital over a given period. For obvious reasons, it does not include any patients with this diagnosis in whom the condition was accidentally found during a laparotomy for other pathologic changes.

This series consists of thirty-three cases of chronic cholecystitis, forty-seven of chronic appendicitis, thirty-four of a combined chronic cholecystitis and appendicitis, and forty-six of peptic ulcer. In the clinical questionnaire used at this hospital, the specific inquiry concerning food relief is made and the reply of every patient is recorded. The character of pain complained of varied as widely as that usually found in a corresponding number of patients suffering from uncomplicated duodenal or gastric ulcers. In every instance a minute postoperative note has been made stating in detail the extent of the pathologic changes present as well as a notation on the condition of the other abdominal organs.

In the first group there were thirty-three cases of chronic cholecystitis. Of these, five, or 15.4 per cent., gave a definite history of food relief.

In the second group there were forty-seven cases of chronic appendicitis. Of these, seven, or 17.5 per cent., showed food relief.

In the third group there were thirty-four cases of combined chronic cholecystitis and chronic appendicitis. Three, or 8.6 per cent., gave a history of food relief.

In the fourth group there were forty-six cases of peptic ulcer. Of these, twenty-one . . . gave a history of food relief.

The interesting feature of this summary is the relative frequency of hunger pains in gall-bladder, appendical and duodenal infections. Relief of pain by ingestion of food has been generally recognized as a cardinal symptom of duodenal ulcer, and has served as one of the most important differential points in the diagnosis of this condition. It is rather remarkable that slightly less than one-half of the ulcer cases in our series gave this history. We may assume from this low percentage that a duodenal lesion alone is not the sole provocative factor, and it becomes more apparent when we find the same symptoms in from 8 to 17 per cent. of our chronic gall-bladder and appendical cases.

The age of the patient, duration of the illness, percentage of hydrochloric acid or roentgenologic studies apparently bore no relation to the incidence of this complaint.

It is obvious that the symptom of hunger pain is not solely due to peptic ulcer, and that peptic ulcer does not always cause hunger pains. In this series, 45.6 per cent. of our cases of peptic ulcer had hunger pains, while this symptom was present in 15.4 per cent. of patients with cholecystitis and in 17.5 per cent. of cases with



appendicitis. There was also a marked difference in cases with adhesions and without adhesions. Of the cases of cholecystitis with adhesions 22.7 per cent. had hunger pains, and all of the cases of cholecystitis with a history of hunger pains had adhesions. Adhesions apparently predispose to hunger pains in cholecystitis.

*Gastro-Intestinal Hemorrhage Not Due to Peptic Ulcer.* The mimicry of the symptoms of hemorrhage from a gastric or duodenal ulcer is not infrequent. When blood appears in the stomach or gastro-intestinal tract, there are many sources from which it may come. There may be toxic erosions, as occur after burns. Rosenow has shown that injections of certain strains of streptococci often cause erosions or ulcerations of the duodenal mucosa of the rabbit. Certain chemicals or irritating foods may produce gastric or duodenal erosions. The congestion of the gastric veins from enlargement of the spleen or from hepatic cirrhosis and the large varicose veins around the cardiac portion of the stomach and the terminal esophagus are frequent sources of hemorrhage.

An unusual case of hemorrhage occurred in a patient of mine (Mrs. K. W.) who gave a history of blood in the stools at intervals for several years before admission to the hospital. She became extremely weak, and vomited a great deal, though she did not vomit blood. She had been given a blood transfusion, and placed on a milk diet, but without benefit. Physical examination was essentially negative, and gastro-intestinal roentgenologic studies were negative. Laboratory examination showed an extreme degree of secondary anemia and a low leukocyte count. A tentative diagnosis was made of duodenal ulcer. At operation, February 20, 1928, the stomach and duodenum were normal. At the hepatic flexure of the transverse colon was a flat mass, which was also attached to the jejunum. It was extremely vascular. A part of the jejunum and a part of the transverse colon were resected, and the patient made a satisfactory recovery. The tumor was a vascular, degenerating neuro-fibroma, arising from the transverse mesocolon. The growth had invaded the upper jejunum at one small point, which was the source of the hemorrhage.

*Other Symptoms of "Indigestion."* The other symptoms commonly associated with peptic ulcer are less conspicuous. They consist chiefly of gaseous eructations, nausea with occasional vomiting, and so-called waterbrash or heartburn. These are probably from an upset of the motor mechanism of the stomach and intestines, which is really the cause of the great majority of all

gastric symptoms. Alvarez, Klein and others have shown that most of the gastric and intestinal peristalsis is due to what Alvarez terms a gradient movement. The stimulus for peristalsis of the stomach arises from the lesser curvature. The rate of contraction at the point of origin of peristalsis in the lesser curvature near the esophagus is distinctly faster than on the greater curvature about the pylorus. Similarly, it is greater in the upper jejunum, being 20 per minute, than in the lower ileum, where it is about 11 per minute. Things that tend to upset this mechanism, such as irritation where the rate of contraction is normally low, or depression where it is normally high, may interfere with peristalsis to such an extent as actually to reverse the peristaltic current.

Reversed ripples of peristalsis appear to coincide with nausea and, if marked, vomiting may occur. If there is irritation about the pylorus the reversed gastric peristalsis may cause regurgitation into the esophagus of the gastric contents and produce symptoms of waterbrash and heartburn. This does not necessarily mean that there is an excess of hydrochloric acid in the gastric juice, but merely that it is present in a region physiologically unaccustomed to the acid. It has been shown that in patients who suffer from heartburn or waterbrash a small sponge introduced into the esophagus and left for a few minutes will, when withdrawn, often show an acid reaction, whereas normally the reaction in this region should be alkaline.

These symptoms of regurgitation, eructation, heartburn and nausea may be produced by the irritation from a gastric or duodenal lesion such as a peptic ulcer at the pyloric end of the stomach or in the duodenum, or they may arise from extra-gastric causes which induce pylorospasm. They may also be due to toxic materials such as products from acute infectious diseases, which tend to weaken the more rapidly contracting sensitive muscles of the upper portion of the stomach and duodenum, while the more hardy muscle which contracts slowly is but slightly, if at all, affected.

*Pylorospasm.* The work of Walter Hughson on pylorospasm is interesting. In his experiments on dogs he has shown that there is a tendency to pyloric spasm following an injury to the peritoneum. It is a reflex spasm and the



paths of the reflex arc are through the vagus nerve. After inducing the spasm and delayed emptying of the stomach in dogs by creating a lesion in the cecum, he has then caused normal emptying in these animals by resecting the vagus nerve, and finds that removing the branches of the vagus about the middle of the stomach has the same effect as when the nerve is severed immediately on entering the stomach. Not infrequently, according to Hughson, an intensely irritable stomach without a gastric lesion may be relieved by section of the gastric branches of the vagus. In several patients with marked gastric symptoms I have done this after removing the apparent cause of irritation, as a diseased gall-bladder or appendix, and in most of them there has been relief.

As Hughson has pointed out, pylorospasm may be induced by a lesion anywhere in the peritoneal cavity. Probably the most common source for such a reflex is the appendix. While many appendices doubtless have been removed without benefit, there still remains a definite though small percentage of patients in whom hunger pains and gastric distress form the chief clinical symptoms of appendicitis. The following case illustrates this condition:

Mr. C. B. J., single, aged 28 years, had "stomach trouble" which began about ten years ago. At first the symptoms were loss of appetite and dull epigastric pain with no particular relation to meals. There was decrease in weight. He was given an ulcer diet, with some relief for about a year. Then the epigastric pain became more pronounced, began when the stomach was empty and was usually somewhat relieved by food and alkalis. There was occasional nausea, and a considerable amount of gas. There had been at times slight tenderness in the region of the appendix. The laboratory examinations were negative except for low free hydrochloric acid in the gastric juice, and low total acidity. Roentgenologic examination showed what appeared to be a pylorospasm with a possibility of duodenal ulcer, and definite disease of the appendix. At operation, February 4, 1929, there was no evidence of an ulcer, or of a healed ulcer, either in the duodenum or in the stomach. There was marked pylorospasm, and most of the branches of the gastric vagus nerve were resected. There was a definite chronic appendicitis, and the appendix was removed. The patient made a satisfactory recovery, and when last heard from, three months after the operation, he was symptom-free.

According to Alvarez, there is a reflex connection between the emptying of the lower ileum and the relaxation of the pyloric sphincter. He

says, "Just as an emptying of the stomach tends to produce an emptying of the lower ileum into the cecum, so it appears that an early emptying of the ileum may favor an early emptying of the stomach and a slow emptying of the ileum may slow the emptying of the stomach. Considerable experimental work has been done on this subject by Hedblom and Cannon and later by White. They found that in cats they could slow the progress of food through the stomach and small intestines if they irritated the cecum sufficiently with croton oil. Mild degrees of irritation produce no effect on the emptying of the stomach. Similarly in man much depends on the degree of irritation produced by the lesion, upon the stage in which we find the disease and upon the original stability of the gradient in a particular individual."

The following two cases, from many of this kind that I have had, illustrate the relation between gastric symptoms and extra-gastric lesions:

Mr. M. E. L., aged 25 years, gave a history of "gas on the stomach," dull pain and burning in the epigastrium at intervals, particularly evident about an hour or two after eating. There was no nausea or vomiting. The symptoms had been present about eighteen months. He had lost 25 pounds in weight during the past year. There was for a time some improvement on diet, but the symptoms returned and were more severe than ever. Physical examination showed the patient considerably underweight, but the examination was otherwise practically negative. Laboratory examination showed moderate secondary anemia, and was otherwise negative. Roentgenologic examination showed marked hyperperistalsis of the stomach and a defect near the junction of the first and second parts of the duodenum suggestive of ulcer. A diagnosis was made of duodenal ulcer and secondary anemia. At operation on August 11, 1928, the stomach and first portion of the duodenum showed no lesion. About three inches from the pylorus there was a sharp adhesion to the gallbladder which pulled the duodenum upward. The gall-bladder and appendix were removed. Both gall-bladder and appendix showed chronic inflammatory changes.

Mr. L. R. G., aged 23 years, was admitted to the hospital as an emergency case with a history of rather sharp pain in the epigastrium beginning six hours before admission. The pain radiated slightly to the right lower quadrant. He was nauseated. There was a history of "indigestion" for a number of years with hunger pains and occasional nausea. He was thought to have peptic ulcer. Physical examination on admission showed the lower right rectus muscle spastic. There was tenderness just to the right and below the umbilicus. The leukocyte count was 10,000, with 90

per cent. polymorphonuclears. At operation, April 6, 1929, there was a hernia of the ileum under a congenital band which was the mesentery to a rather large Meckel's diverticulum. The appendix was acutely inflamed. No evidence of peptic ulcer could be found.

#### CONCLUSION

The symptoms of peptic ulcer are often simulated by other lesions, and occasionally the mimicry may be very confusing. The cardinal symptoms, hunger pain and hemorrhage, are, however, usually associated with other evidence that may lead to a correct diagnosis. In the atypical cases of peptic ulcer in which both hunger pain and hemorrhage are absent, and in cases simulating peptic ulcer, the diagnosis may be extremely perplexing and will require the combination of a careful clinical observation, a thorough laboratory study, and a competent roentgenologic examination, in order to determine the facts.

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#### THE PHYSICIAN AND LITERATURE\*

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The practice of the healing art, day in and day out, is arduous in the extreme—monotonous, deadening to some, a routine to others, to still others a task enlivened with intense interest—each case presenting a new and different problem. To the man who has much within, interest in patients never flags, and it is only to the man who is ceasing or has ceased to be a student that routine practice becomes a drudgery and patients are visualized only as one unhappy individual after another. I have no panacea—no cure-all—but only a suggestion which may take the professional man a bit out of his routine, stimulate anew the student spirit, and illuminate his daily tasks with a new and clearer understanding.

Osler early saw the importance in his own career of going thoroughly into the history of disease, and everyone knows how Osler, through his enthusiasm for historical study, not only maintained a youthful outlook upon medicine, but became an outstanding, international exponent of the historical approach to the study of disease. To him historical medical studies furnished mental relaxation and real fun. No one can read his delightful essays under the title "The Alabama Student" without a full sense of the real pleasure which the author must have had in their composition.

Take for example his essay on Thomas Dover, he of the powder *Pulvis Opii et Ipecacuanhae* fame, whom Osler calls "Physician and Buccaneer." Reading this fascinating sketch of Thomas Dover, one obtains a clear picture of practice of the time and a fairly essential history of one of the last of the privateering expeditions against the Spanish Main. Dover, whose book, "The Ancient Physician's Legacy," went through seven or more editions, tells that he resided with Sydenham as resident pupil. The buccaneering expedition referred to became famous not only for treasure taken and towns sacked, but for the return of Alexander Selkirk from the island of Juan Fernandez and the subsequent narrative, Defoe's "Robinson Crusoe."

\* Address at testimonial dinner given Dr. Lucius H. Zeuch, editor of Volume I, *History of Medical Practice in Illinois*.



One reading Osler's essay feels impelled to renew acquaintance with Defoe—perhaps even to obtain his book on "Black Magic" and link up Dover, Crusoe and Defoe and the superstitions that are so well set forth by Defoe in his illuminating descriptions of the practice of the "Black Art."

We must also recall Defoe's "Journal of the Plague Year." It was published shortly after Robinson Crusoe and of the many books on the Great Plague of London it is the only one that has survived. Defoe was essentially a journalist, though dubbed the father of the English novel. Gathering his facts from contemporary sources of the plague year, 1665, he wrote of them as though he were present, publishing his "Journal" in 1722. Of his "Robinson Crusoe" it is said that the discovery of the print of a man's naked foot in the sand is the greatest bit of realism in all fiction. Perhaps some day we will stumble across Defoe's grave in the Bunhill Fields Burying Ground and there read his epitaph in a stone erected by the subscriptions of the school children of England—and we have forged a link with Defoe just because Dr. Osler called our attention to an old 17th century buccaneer-physician, Thomas Dover.

Turn a few pages in Osler's "Alabama Student" and read his incomparable essay on "A Backwood Physiologist," William Beaumont. Here are portrayed scenes and shrines sacred to every follower of the Healing Art, particularly to those of us of the lake region where William Beaumont spent so many years of his life at frontier military posts—Michilimacinae, Green Bay, Michigan, Fort Crawford on the Mississippi two miles above the mouth of the Wisconsin River, and Jefferson Barracks, St. Louis. At these posts there was stationed at various periods the studious young army surgeon who improved an opportunity to make what at that time proved to be the outstanding advance in gastric physiology. Osler tells the tale entrancingly and his excerpts from Beaumont's published report are well worth reading. One of my choicest possessions is a copy of the original 1833 Plattsburgh edition of Beaumont's "Experiments" in the original board binding and with the paper label still adhering to the back. Suffice it to say that Beaumont's work which lives with the reading of Osler's essay, directed more attention to

American medicine than all of the clinical observations and vigorous polemics of Benjamin Rush and his contemporaries.

Find, if you can, a copy of the New England Quarterly Journal of Medicine and Surgery of 1843, or a later republication of the essay in "Currents and Counter-Currents," and read therein the forceful logic of Oliver Wendell Holmes pleading the cause of the poisoned women against the ignorance of midwives and practitioners of the obstetric art. Long before the dawn of bacteriology and the clinching of the doctrine of infection, Holmes, by consulting the records of observers who had preceded him, with his own experiences and those of his friends and colleagues, set forth the cause of the expectant mother with a clarion note. When Holmes was asked later in life whether he would rather have written his essay on puerperal fever or the "Chambered Nautilus," he replied that while the "Chambered Nautilus" was a favorite poem of his, he would rather be known to posterity as the man who had fought the cause of the poisoned women.

If indeed your interest has been aroused by this forceful essay, and if you care to follow the matter further, secure from almost any medical library a copy of the report of the Dublin Lying-In Hospital under the mastership of Robert Collins and you will read there of the delivery of over ten thousand women by the use of modern cleanliness, the "stoving" of mattresses and bed linen, the sterilizing of the wards and ward utensils with chlorinated soda, and this without a single death from puerperal fever, and it all happened twenty years before Semmelweis in the Vienna-Frauen Clinic advocated the riddance of cadaveric infection by means of chlorinated water.

If your interest has not as yet been in the slightest degree aroused and if you have a poetical bent, read Osler's essay on John Keats, the apothecary poet, and you will read the story of the English lad of humble parentage who became the singer of songs in verse, the choicest that England has ever produced. John Keats at fifteen was indentured as a surgeon's apprentice, which career he pursued for four years, later becoming a student at Guy's and St. Thomas' hospitals and all the while, as it was said, wasting his time writing poetry. While employed in the apothecary



cary of one of the leading English hospitals, he published his first small volume of poems. So immediate was the success of this tiny volume that a year later another appeared. Who will begrudge the loss to surgery and to the apothecary shop of John Keats since the world is so richly the gainer by his literary outpourings. Mr. A. Edward Newton tells in his "A Magnificent Farce" of a visit to Amy Lowell.

"Here are several sonnets of Keats and the original manuscript of 'The Eve of St. Agnes'; Miss Lowell will say, placing them in your hands, and you will feel a gentle thrill as you turn the soft pages, remembering that you are gazing upon immortal poetry."

If your interest in Keats is not thoroughly assuaged, read Amy Lowell's two volumes on John Keats for the truest appreciation of this young English lad who too soon succumbed to tuberculosis. Perhaps from John Keats we may extend our interest to his friend Shelley and thus have an acquaintance with the two outstanding poetical geniuses of the early 19th century.

Some years ago, in a copy of the Strand Magazine, I saw a statement by Dr. Conan Doyle (now Sir Conan Doyle) to the effect that the original of his "Sherlock Holmes" was his old professor of medicine at Edinburgh, Dr. Joseph Bell. He says:

"I was a clerk in Dr. Bell's ward. A clerk's duties are to note down all the patients to be seen and muster them together. When everything was ready I would show them in to Dr. Bell, who would have the students gathered around him. His intuitive powers were simply marvelous. Case No. 1 would step up. 'I see,' said Dr. Bell, 'you are suffering from drink, you even carry a flask in the inside pocket of your coat.' Another case would come forward. 'You are a cobbler, I see.' Then Dr. Bell would turn to the students and point to them that the inside of the knee of the man's trouser was worn where the man had rested the cobbler's lapstone. All this impressed me very much. He was continually before me, his sharp, piercing, grey eyes, eagle nose and striking features. He would sit in his chair with his fingers together and just look at the patient before him."

On reading the above I was tremendously interested in learning more of Dr. Joseph Bell and curiously enough, ran onto a sketch of the "Life

of Joseph Bell," published in Edinburgh in 1913. Dr. Joseph Bell descended from a long line of physicians. His great grandfather was Benjamin Bell, who wrote rather widely on vaccination. His grandfather was Dr. Joseph Bell, a distinguished anatomist, and his father, Dr. Benjamin Bell, was one of the ablest physicians of Edinburgh of his time. It appears from the short biography, that Dr. Joseph Bell was not particularly proud of the reputation he had acquired as the original of Sherlock Holmes. That his teaching gave birth to Conan Doyle's character there can be no doubt. In one of his essays Dr. Joseph Bell says:

"The recognition of disease depends in great measure on the rapid appreciation of small points in which the disease differs over the healthy state. In fact, the student must be taught first to *observe carefully*. To interest him in this kind of work, I found it useful to show the student how much a trained use of the observation could discover in ordinary matters such as the previous history, nationality and occupation of the patient. Nearly every experience writes its sign. The scars of the miner differ from those of the quarryman. The carpenter's callouses are not those of the mason. The shoemaker and the tailor are quite different. The soldier and the sailor differ in gait, though last month I had to tell a man who said he was a soldier that he had been a sailor in his boyhood.

"I regarded Conan Doyle as one of the best students I ever had. He would never tire of trying to discover those little details which one looks for. I recall that he was much interested in a patient who walked in and sat down. 'Good morning, Pat,' I said, for it was impossible to overlook the fact that he was an Irishman. 'Did you like your walk over the links as you came in from the south of town?' I asked. 'Yes,' said Pat, 'did your honor see me?' Conan Doyle was tremendously puzzled, and after himself interrogating the patient at considerable length, wanted to know how I had made the observation. On a showery day such as that had been, reddish clay on the bare parts of the links adheres to the boot and there is no such clay anywhere else around the town for miles. That and other similar instances set Conan Doyle experimenting himself in the same direction, which, of course, was just what I wanted."

After I had traced the clue as to the original of Sherlock Holmes to Dr. Joseph Bell, I read with even greater appreciation and certainly better understanding, those marvelous exploits of Doyle's fictitious character which, after all, in the light of analysis, do not appear quite so impossible.

Which of us has not read "Rab and His Friends"? So before leaving Edinburgh, let me suggest that we make a short persusal of a biography of Dr. John Brown, written by Dr. Alexander Peddie. Once more Syme, the great surgeon, lives beside us through the pen of Dr. John Brown. Thackeray, a close friend of Brown, appears a bit more real and tangible and even Ruskin and William Ewart Gladstone have added touches which we have not found elsewhere. If perhaps interested in Brown, we might read his delightful essays on Locke and Sydenham, enjoy his spirit of droll humor, his love of dogs, his delightful literary style, his appreciation of art, and withal, the sympathetic care that he gave his patients and the love and devotion which they returned to him. One cannot read the life of John Brown without resolving to mean more as a friend to each and everyone who seeks professional help.

One would like, did time permit, to describe that choice spirit, who inspired Osler so tremendously, Sir Thomas Brown. We are all no doubt familiar with his "Religio Medici," that rare volume of the very finest English prose. Thomas Brown, his medical practice and ideals, his literary and scientific writings, will make for a most fascinating study for one so inclined—a study that will ramify into the history of the time of Charles the Second.

Again one could take up the physiologists or the anatomists, with scores of hallowed names and distinguished careers—Vesalius, Harvey, Winslow, Spigelius, Glisson, Servetus, the Hunters and scores of others. Or one could turn to the great clinical observers, such as Graves and Parry, Corrigan, Stokes, Laennec, Auenbrugger and many others, and find in each that devotion to the ideals of science and practice that we of today but feebly emulate.

The story of the discovery of anesthesia and its surgical applications constitutes a thrilling though a tragic chapter in the history of American science. To know the parts played by Hor-

ace Wells, Crawford W. Long, Morton, Jackson and others will well repay the time spent in such a study. Pursue the study of the history of anesthesia to the laboratory assistant Humphrey Davey and his employer, that quaint and queer Dr. Thomas Beddoes, and it will lead to the earliest years of the 19th century and to an acquaintance with Erasmus Darwin, Coleridge, Wadsworth and scores of literary and scientific celebrities.

Another poet-novelist-physician was Tobias Smollett, whose poetic satires and distinctly artistic portrayal of contemporary British character will be read as long as time endures. Dr. John Moore's correspondence with Burns has retained for us more of real insight into the character of Burns than has come to us from almost any other source, and then we must not forget that it was Dr. James Currie of Liverpool who assumed the arduous task of writing Burns' biography. Currie, it will be recalled, was the first to advocate stoutly the use of cold water in fevers. Our own S. Weir Mitchell we must not fail to mention. A true student of the history of medicine—a follower of Charaka—he has given to American literature essays, poems and novels of enduring character, all of which will well repay thorough reading; a scholarly man who in a busy professional life found time to write a group of historical novels. His "Fat and Blood" will be read by present day students of medicine as a medical classic.

It would be as unbecoming as ungrateful to fail to mention the editors of our medical journals. Theirs is generally a thankless task and so we would recall with gratitude the work of such pioneer editors as Dr. John Redman Coxe, Dr. B. S. Barton and Dr. Minis Hays of Philadelphia; Daniel Drake and John D. Goodman of Cincinnati; Charles W. Short and John E. Cooke of Lexington, Kentucky; Samuel L. Mitchell, Elihu H. Smith and Edward Miller of New York; and without unduly extending the list, John Evans and Nathan S. Davis of Chicago. Medical journalism has proven a potent factor in moulding physicians into a thinking, progressive profession. Witness the powerful position occupied by the Journal of the American Medical Association, and the growth in influence and prestige of the several state journals, many of



which take high rank as true exponents of scientific medicine.

The greatest tribute that can be paid to the pioneers, the masters of medicine, is to record for all time their personalities, their struggles and their achievements. To accomplish such a task requires the rare gift of historical research, indefatigable energy and patience beyond the scope of most men. The "History of Medical Practice in Illinois" has been written and the profession of medicine is under everlasting obligation to those who conceived the project, but most of all to the genius, the spirit of enthusiasm, the willingness to sacrifice, and the rare judgment of the author, Dr. Lucius Zeuch. The result is history, not a compilation. Dr. Zeuch approached the task from the standpoint of the true historian, searching for and finding invaluable source material which but for his efforts would have been forever lost. To the gift of historical narrative Dr. Zeuch added a research instinct rarely shown, and the result is a truly imperishable record of medicine in Illinois, contributing largely to an understanding of the spirit of the pioneer and the social and economic forces engaged in planting a new civilization in the "Northwest" territory. Dr. Zeuch has accomplished at great personal sacrifice a monumental task; a noble contribution to his profession, and to the memories of the vanguard of medical science. And so we would add the name of Lucius Zeuch to those rare and appreciative individuals, delvers in the musty records of the past; those men, like-minded, as Osler and Holmes and Weir Mitchell, who obtained a clear view of present needs and future possibilities through a study of the history of medicine. The profession of medicine is honored in Lucius Zeuch.

And so as at the beginning, may we not agree that we all need that paradoxical thing, a relaxation and a stimulus, a change, as it were, from that deadly rut-making routine. We need a bit of broadening too, for as DuBois-Reymond puts it:

"Where science reigns exclusively, the intellect becomes poor in ideas, the fancy in images, and the soul in sensibility, and the result is a narrow, hard and dry disposition, forsaken of the Muses and Graces, and not only so, but science leads

down by imperceptible gradations from the highest efforts of human intellect to mere mechanical work that looks at nothing beyond gain."

### FALLACIES OF THE STEINACH OPERATION—EXPERIENCES WITH THE LANTERNIZATION PROCEDURE

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Steinach claimed that by his vasoligature operation, with resection of the vas deferens, not only was there a restitution of sexual function in senile subjects and in others in whom the function was deficient, but there was a general physical and mental improvement which amounted to "rejuvenation." These results, Steinach stated, were due to reactivation and hypertrophy of the interstitial cells of Leydig (puberty gland), which are the cellular elements directly concerned in the internal secretory function of the testes. The increased secretion of the interstitial cells, Steinach maintained, stimulated and renewed general endocrine activity.

*Failure of the Steinach Operation.* While at first a number of operators reported apparently favorable results following the operation, it must be admitted that time has not substantiated the claims made for the procedure. It has failed not because the internal secretion of the testicle fails to activate the metabolic or other factors which dominate virility and the physical and mental characteristics by which it is manifested, but because this operation does not cause the hoped for reactivation.

Steinach's main claims—increase of interstitial tissue with corresponding increased secretion and atrophy of the seminiferous tubules—have been challenged by a number of observers. Rossi's<sup>1</sup> experiments showed that following the Steinach operation the basal spermatogenic cells persisted and after a while regenerated. Spermatozoa were still present for seven months after the operation and there was but a very slight increase in the interstitial cells. From Cunningham's<sup>2</sup> experiments he concluded that it cannot be considered as proved that a ligation of the vas deferens produces rejuvenation by hypertrophy of the interstitial cells, because the evidence that ligation causes such hypertrophy is contradicted by his own findings and those of others. Further-



more, if degeneration of the seminal tubules leads to or is accompanied by increase of the interstitial cells, and if this increase causes rejuvenation, then these effects should be produced by artificial cryptorchism. This author's experiments, as well as those of Carl Moore,<sup>3</sup> Wheelon,<sup>4</sup> Oslund<sup>5</sup> and others, showed that following vaso-

there was hypertrophy of the intersiminal connective tissue, were fallacious as based upon too short an interval after vasoligature. In Retterer's own numerous experiments on dogs, having the vasa deferentia ligatured and resected following the Steinach technic and followed for two years after operation, he found that metabolic and nutrient exchanges were at first lowered in the testicle. Ultimately, the epithelial lining of the tubules thickens and persists and spermatozoa continue to form, although not biologically perfect. The epithelial tissue is ultimately transformed into reticulated connective tissue. Far from hypertrophying, the interseminiferous connective tissue shares in the slowing-up process of cellular elements and little by little takes on the character of a fibrous tissue! These changes are proved by a number of histologic illustrations. Retterer is satisfied that vasoligature or deferentectomy does not provoke hypertrophy of the interseminiferous connective tissue (the interstitial tissue).

These results of Retterer can only be inter-

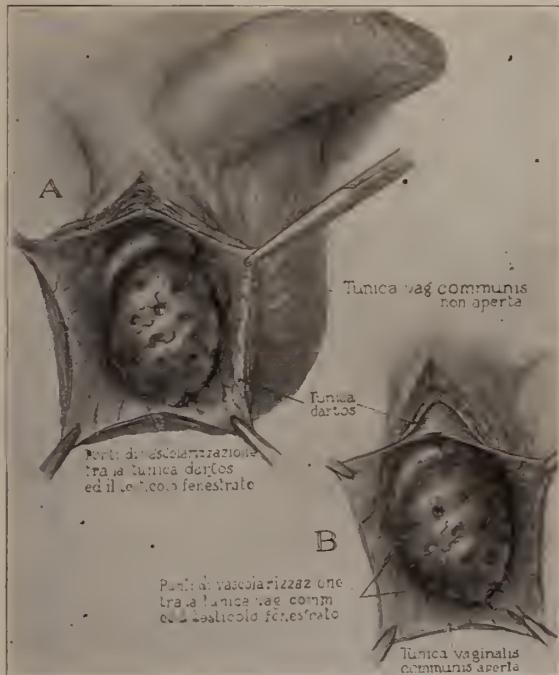


Fig. 1. Implantation of lanternized testes. (Author's method.)

ligation (when the testis remains in the scrotum) there is no evidence of degeneration of the seminal tubules nor of any injurious effect on spermatogenesis, even after six months. Schinz and Slotopolsky<sup>6</sup> from a review of the subject and from their personal observations think that the results of Steinach's operation are due to resorption of destroyed seminal epithelium and not to increased functioning of the "puberty gland." Weiss<sup>7</sup> thinks that the same results can be obtained with organotherapy.

Regarding the clinical aspects, Stettner,<sup>8</sup> reviewing the results of the operation up to 1927, finds that unfavorable effects were obtained by Levy-Lanz, Mühsam, Küttner, Haubenreisser and Drüner.

But a definite histologic proof is given by Retterer.<sup>9</sup> This investigator believes that the results obtained by Steinach and others, insofar that the seminal epithelial tissue disappeared and that



Fig. 2. Using thermocautery to lanternize testis. (Author's method.)

interpreted as meaning that Steinach's operation is unphysiologic and opposed to the natural organic procedures. The operation will not renew the strength or stimulate gonadal secretion in an exhausted subject. The transient and doubtful clinical results reported by Knud Sand and others bear this out. Its only indication, as Schinz and Slotopolsky point out after a review

of the literature, is as a sterilizing operation for eugenic purposes.

My personal observations in regard to the Steinach operation are in general accord with the foregoing. In 1924, in my book, "The Human Testis,"<sup>10</sup> I expressed the opinion that more clinical data from unbiased sources were necessary in order to arrive at a definite conclusion in regard to the clinical value of the



Fig. 3. Lanternization with scissors. (Author's method.)

operation. The available evidence at that time inclined to pessimism and time has only intensified this view. The instances in which I clinically tried this method were mostly failures.

The main objections to the Steinach operation may, therefore, be summarized thus:

(a) That there is a useless sacrifice of the vas deferens and functional abolition (procreative function) of the corresponding testis.

(b) That by the spermatostasis created spermatoceles are likely to and often do develop.

(c) That it is an unphysiologic operation inasmuch as the testicle, while still possessing some normal functioning, is turned into an unphysiologically functioning organ.

(d) That it does not do what Steinach promised, since the interstitial tissue, instead of increasing, actually ultimately becomes fibrous and such endocrine potency as it possesses is lost.

(e) That there is no proof that endocrine glandular secretions are stimulated. Rather, if it is admitted that the interstitial cells are the seat of stimulatory testicular endocrine activity

(and I believe that to be so), since these degenerate, their effect in maintaining virility and its concomitants is lost.

(f) That the only proved clinical effect of the operation is sterilization.

*The testicular internal secretion and virility.* There can be but little doubt, from the vast amount of experimental and clinical work that has been done on the subject by many investigators, that the internal secretion of the interstitial cells of the testicle is responsible for sex characteristics in the male and for those qualities that are comprised in the term virility. Physiologically, when gonadal secretion is deficient or ceases in the normal course of senescence, those sex characters and qualities which depended upon it wither and disappear. As this has been observed well within the ordinary span of youth and middle age, when both conditions were fulfilled, the relation of cause and effect is evident; moreover, numerous experiments confirm the proposition.

It would be superfluous to reiterate what the



Fig. 4. Author's method of lanternization of patient's own testis.

experimental and clinical work of Voronoff, Steinach and others, as well as my own work, fully proved—that when testicular secretion is deficient or absent, testicular transplants can, for a greater or less time, function in the body and produce the same physiologic effects as if the real testicular secretion was present. I was the first, I believe, to submit histologic proof



that such a transplant may become vascularized and that the interstitial connective tissue cells (Leydig cells) proliferated.

Perusal of the literature leaves no doubt that the processes of normal senescence can in a measure be inhibited or delayed by such a transplant, at least within physiologic limits and within the life of the implant; but the effects are more pronounced when senility is premature or in what is



Fig. 5. Reposition of lanternized testis with tunical vaginalis, which is closed with catgut suture. (Author's method.)

known as pre-senility. This also applies to accidental loss of the testes (trauma, pathology).

Now while the transplant is the best and the only satisfactory method of restoring function when the testicle has entirely lost its endocrine functions, it should be and as a matter of fact is possible to arouse and stimulate secretional ability in a testicle which is merely degenerating but has not lost its functional power, that is to say, that the fibrous involution of the testicular tissue, both seminiferous and interstitial, may be delayed.

It should be distinctly understood here that I am not speaking of "rejuvenation" but of reactivation and of retardation of the symptoms of decrepitude accompanying senescence. It is unfortunate that Steinach and others should have referred to reactivating procedures as "re-

juvenation." The public press has made a joke of these methods, which are strictly scientific surgery, and the public has not only been gulled by quacks but has been led to expect what was impossible to obtain and hence has discredited and hampered scientific medical progress. Both in my book already referred to and before the Society of Surgeons of Paris<sup>11</sup> and the Royal University in Rome as well as at the conference at Milan,<sup>12</sup> I have taken every opportunity to discredit this term "rejuvenation," as applied to surgical operations which have for their object prolonging physical and mental vigor at a time when they are physiologically slowing, and retarding the signs and symptoms of senility.

*The author's lanternizing testicular technic.* In the course of my work on testicular transplants I developed the technic of what I termed "lanternization" or fenestration of the implant. This technic is fully described on pp. 405-6 of my book, "The Human Testis." It is also illustrated in the monograph, "La funzione endocrina

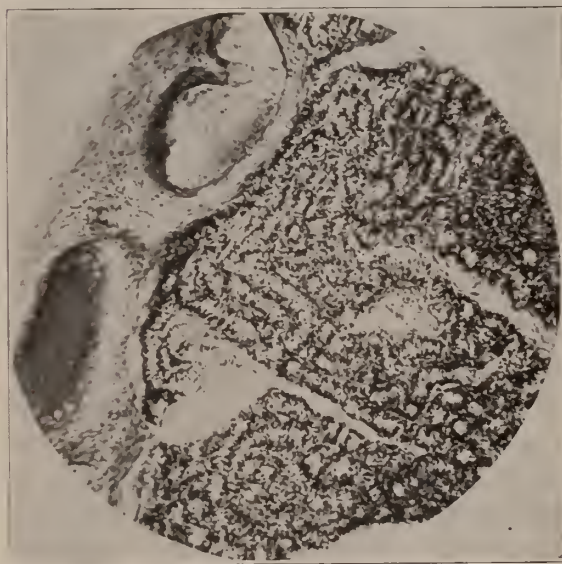


Fig. 6. Microphotograph of lanternized testis repositioned in tunica vaginalis. Three months after operation.

delle ghiandole sessuali," published by the Istituto Sieroterapica, Milan, 1925, containing an account of a conference including Gley, Voronoff and others in which I had the honor to take part. Figures 1, 2 and 3 show clearly the extra-vaginal and endo-vaginal lanternization of a transplanted testicle. This consists, after freeing the testicle from the tunica vaginalis, of snipping a number of small slits in the tunica



albuginea with scissors or else removing them with the cautery and has for its object a freer lymph and blood communication between the testis proper and its vascular envelope. The substance of the testis is, when the technic is carefully carried out, only slightly prolapsed through the slits or fenestrae. Figures 4 and 5 depict my lanternization operation done on the patient's own testicle.

I am insisting on these particulars to claim



Fig. 7. Microphotograph of lanternized testis not repositied into tunica vaginalis. Same animal (macacus rhesus) three months after operation.

my priority in this technic, since Steinach<sup>13</sup> has published a practically similar procedure under the name of albugineotomy and quite recently an article by Lakatos<sup>14</sup> has appeared in the *Wiener medizinische Wochenschrift* describing a "new" plastic testicular operation for rejuvenation which is nothing more than my lanternization technic. I can only assume that when the latter described his method as new he had not searched the literature or at least was not aware of my precedence in the matter. I am glad, however, to note that in the cases in which he executed this technic the results, though still of short duration, have been quite satisfactory. Steinach claims that slitting of the albuginea and prolapse of the testis favors proliferation of the interstitial cells by relieving internal pressure just the reverse of what results after vasectomy!

In this lanternization method the great and important matter is that the blood supply to the testicle is reactivated, that pressure is relieved and that the atrophic changes in the testicle due to decreased blood supply are obviated by the formation of new capillary vessels and consequent improvement in the circulation of the testis operated upon. It was this new blood supply, I believe, which enabled my testicular transplants to become rapidly vascularized, as I have already mentioned. I have extended this technic to the testis *in situ propria* in cases in which the endocrine secretional ability was not yet lost, that is to say, in ordinary aging testicles. This method was tried only after I was satisfied of its satisfactory surgical results by animal experimentation.

There appears to be little doubt but that by improving the diminishing blood supply to the testis proper the natural fibrotic degeneration of this tissue, which occurs physiologically with the development of senility, may be retarded; the interstitial cells are again activated and stimulated to produce their proper secretion, and this renewed activity and production of gonadal secretion acts through the blood, having its normal effect upon the whole organism and helping to restore failing powers in the physical and psychic senses. The operation of lanternizing the testis *in situ* in natural senility (or in pre-senility when the gonadal secretion is for any reason deficient but the power to produce it is not entirely lost) is, therefore, a physiologic one, since it helps rather than destroys a failing natural function.

The clinical results of lanternizing the testicle *in situ*, in the series of cases in which I have tried it, are thus far encouraging. I may say at this stage, however, that the results show that by improving the direct blood supply to a testis through the tunica albuginea better effects are obtained than when the blood supply is to be derived through the tunica vaginalis. The following experiment (one of a series) will illustrate this point more clearly. In other words, a lanternized testis left in the scrotum without being repositied into the tunica vaginalis will not give as good results as when the testicle is covered with its natural envelope, as will be seen from the following study.

## Experiment No. 1

Object.—To ascertain changes in tissue after author's technic.

Animal.—Male *Macacus Rhesus*.

Date of Operation—November 16, 1926.

Technic.—(1) *Right Testicle*.

Incision through anterior surface and all layers of scrotum. Open tunica vaginalis. Luxate testicle. Scarify albuginea; spread with delicate scissors; permit testicular substance to protrude through about five such denuded areas. Testicle *not reposit*ed into tunica vaginalis but permitted to remain free in the scrotum. Closure of wound in scrotum with dermal sutures. Collodion dressings.

(2) *Left Testicle*.

Same exposure.

Same technic—except that after lanternization testicle is *reposit*ed into tunica vaginalis, which is securely sutured over reposit testis with plain catgut. Careful hemostasis (plain catgut sutures). Closure of skin with dermal sutures. Collodion dressings.

Results.—Healing per primam. After one month testicles somewhat enlarged.

Testicles were removed three months after operation and the following changes were noted:

Microscopic Appearance.—Left testicle: Fig. 6. The glandular tissue including the Leydig cells does not reveal any degenerative changes. Similarly, the seminiferous tubules show normal conditions. The blood supply, as evidenced by a comparatively large number of blood vessels surrounding the implanted testicle, is very satisfactory.

Right testicle: (Figure 7.) The right testicle shows some degenerative changes in the parenchyma with more or less obliteration, hyaline degeneration and in some areas a beginning atrophy of the lobuli. The obliterated parenchymatous tissue is replaced by connective tissue. The blood supply is poor.

Remarks.—(12 weeks after operation.) Grossly, the left testicle—the one that was reposit into the tunica vaginalis—appeared the larger; the right testicle—left free in the scrotum after ablation of the tunica vaginalis—the smaller.

Summary.—On histologic examination, *the left testicle*, which had been reposit into the tunica vaginalis, showed very good blood supply

and no degenerative processes; *the right testicle*, which had been left free, was in a state of beginning atrophy with very poor blood supply.

## CONCLUSIONS

1. The Steinach vasoligature and vas deferens resection operation has not achieved what its author claimed for it.

2. Testicular transplantation has a legitimate place in selected cases where there is complete absence or functional loss of testicular secretion.

3. The "lanternization" technic of treating the testicle to improve lymph and blood supply, as developed by the author, is applicable where testicular secretional ability is failing but not entirely lost. It is indicated in certain forms of senility and in cases in which the system is suffering from an insufficient supply of testicular internal secretion (hypogonadism.)

4. The "lanternization" operation has been done by the author in many cases during the past six years. It is a physiologic method and far superior to the Steinach operation, which is mutilating and unphysiologic; moreover, it gives where indicated encouraging clinical results without any known serious somatic or psychic complications.

5. In order to obtain the best results, the technic evolved by the author, as illustrated in other publications and in this article, should be followed with meticulous care.

6. A united effort to discourage the term "rejuvenation" is urged, in order to avoid misleading statements and inspiring false hopes in the breasts of those who are in search of the unattainable.

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## GASTRIC DISORDERS OF ASTHENOPIC ORIGIN\*

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The successful treatment of many gastric disorders often depends upon a recognition of the relationship of two apparently widely separated bodily functions.

A remarkable statement on the subject was presented to the medical profession twenty years ago by Dr. Charles G. Stockton, in a chapter entitled "Introductory Discussion on Diseases of the Digestive Apparatus," that was written for Osler's "Modern Medicine of 1908." Though the content of this chapter has been repeatedly revised, the latest edition (1926) contains this passage unaltered:

"Most frequently the causes of gastric asthenia are to be found in eye strain. This subject has been so widely discussed in America, and from so many points of view, that it is somewhat threadbare; *yet its signal importance remains largely disregarded.* (Italics mine.)

"Irregular or asymmetrical astigmatism is the usual defect most often responsible for the functional disturbance, but it is not always in astigmatism of high degree that the trouble arises. It is more commonly found in instances of moderate degree of astigmatism with axes differing in the two eyes, and especially in anisometropia. Although not limited to that period of life, the nervous disturbances following these visual defects are apt to appear after the age of puberty, and are especially active when the crystalline lens begins from age to lose its pliability."

Other leaders in medical thought have expressed similar decided views. J. H. Musser,<sup>1</sup> writing on "Non-gastric disease presenting gastric symptoms," says: "Who has not seen errors of refraction relieve so-called bilious attacks, periodic vomiting, anorexia, indigestion, and other symptoms."

My own clinical experience amply confirms the views cited. Dr. George M. Gould<sup>2</sup> was the pioneer who definitely related functional gastric disorders to reflex irritation from the eyes; and

this contribution will be remembered long after his over-statements in other directions are kindly forgotten.

Ophthalmologists should routinely inquire about gastric symptoms in their asthenopic patients. The gastric disorder may manifest itself in disturbed secretion, motion, or sensation, with any of the following discomforts resulting: heartburn, fermentation, belching, vomiting, constipation, abdominal cramps, gastralgia, nausea and anorexia.

The magnitude of the refractive error bears little relation to the gravity of the gastric complaint, a small error in a sensitive individual being much more disturbing than a large error in one of different type. This is well illustrated in the following case recently reported by Dr. Crisp<sup>3</sup> of Denver:

A woman of 41 years had been so disturbed by almost constant dizziness with frequent spells of nausea, vomiting, and headache that she was unable to retain an amount of food adequate for normal nutrition. Under cycloplegia, she was found to require: R. plus .62 S. with plus .37 C ax. 120; L. plus .62 S with plus .62 C ax. 30, the cylindrical corrections of the two eyes being thus unequal in amount, and asymmetrical in axis. The symptoms were promptly relieved, and in the course of a few weeks the patient had gained 10 lbs., a result which was unquestionably associated with her ability to retain food.

Patients with beginning presbyopia are particularly prone to digestive disturbance. A man of 44 with anorexia and chronic constipation was relieved by the following: R. plus .37 C ax. 30; L. plus .37 C with plus .50 C ax. 165; and plus .87 S.'s added for reading. Another case, complaining of indigestion, gastric pain, and flatulence, recovered shortly after wearing. R. minus .12 S. with plus .87 C ax. 45; L. plus .50 C ax. 150; and .75 S.'s added for reading.

Until recently there has been no experimental work done to determine the existence of reflexes from the eye to the stomach, or vice versa. The data, heretofore, has all been clinical. In September, 1927, however, appeared in a physiological journal, the results of a research by Percy and Allen<sup>4</sup> that definitely established the occurrence of reflexes from the gastro-intestinal tract to the eye. The *Journal A. M. A.* considered this contribution sufficiently significant to merit editorial comment.

In my personal investigations as to what ef-

\*From the Hull Physiological Laboratory, University of Chicago.

<sup>2</sup>Read before the Section on Eye, Ear, Nose and Throat, Seventy-eighth Annual Meeting of the Illinois State Medical Society, Chicago, May 9, 1928.



fect asthenopia may have on the gastric mechanism, I have experimented on myself, studying the effect of different errors of refraction on the gastric motility. A balloon was swallowed, connected to a water manometer, and inflated to a pressure of 5-6 cm. The tracing was made on a slowly revolving double drum kymograph, that would continue for  $1\frac{1}{2}$  hours before requiring a change of smoked paper.

The empty stomach normally passes through a cycle of three phases of activity:<sup>5</sup> (a) A period of relative motor quiescence, which lasts from  $\frac{1}{2}$  to  $2\frac{1}{2}$  hours in normal adult persons: (b) A period of tonus rhythm lasting generally 30-45 minutes, with gradually increasing amplitude, ending in (c) "A hunger period," of powerful rhythmical contractions, "the hunger contractions." This period may or may not end in tetany, and is followed by abrupt relaxation and quiescence. Tetany when present lasts 2-5 minutes. In the normal individual, the gastric hunger contractions begin even before the stomach is empty, and continue in the absence of inhibitory processes as long as the stomach is empty, irrespective of the time of day or night, and without regard to the time the individual is accustomed to eat.

The tracings that I have passed around speak for themselves. The most constant finding is an increase of the gastric tone, that occurs almost immediately on removal of the error of refraction. The errors that I have worn have for the most part been based on clinical records of gastric distress associated with asthenopia. It would seem that the irritative effects of asthenopia act on the splanchnic nerves, and with the removal of the error of refraction, the stomach is released from inhibition.

I hope to extend this work in the future, when I shall conduct similar experiments upon others. Personally, I make a good subject as I am not disposed to headaches, and was able to continue reading with, or without error, without noticeable discomfort. Likewise I am not subject to gastric complaints, and so cannot be considered especially sensitive.

To note the effect described, the stomach must be in a state of tonus rhythm. When the stomach is in a period of quiescence, it is in a refractory state and no change is induced by removal of the refractive error. Myopia produces

no eyestrain, and consequently the gastric motility is apparently unaffected by this error.

#### CONCLUSION

That reflexes occur from the eye to the stomach, and from the stomach to the eye has now been experimentally established. As a corollary to these findings, closer cooperation should result between gastrologist and ophthalmologist, particularly in the control of functional gastric disorders.\*

25 E. Washington St.

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1. Musser, J. H.: J. A. M. A., Nov. 4, 1905.
2. Gould, Geo. M.: Biographic Clinics (1905).
3. Crisp, W. H.: Ocular vertigo. Am. J. Ophthalmology, 1928, p. 239.
4. Percy, J. F., and Allen, T. D.: Reflexes from the gastro-intestinal tract to the eye. Am. J. Physiology 28:56, 1927.
5. Carlson, A. J.: Control of Hunger in Health and Disease (1916).

#### DISCUSSION

Dr. T. D. Allen, Chicago: This paper is very interesting. Dr. Lebensohn has reversed the methods that Dr. Percy and I used in showing definite experimental proof of the relationship of the eye and the intestinal tract. That experiment was as follows: distension of the stomach or bowel caused in general a feeling of lassitude such as one feels after a heavy meal, mild general perspiration, and locally first a loss of accommodative tone and second an edema of the retina. Reversing this, Dr. Lebensohn has shown that by producing various refractive errors the normal gastric activities are interfered with. In the American Encyclopedia of Ophthalmology, Dr. Savage, in writing of the two muscles of the ciliary body, Mueller's the circular muscle, and Bowman's, the radiating fibres, suggested a possible dual nerve supply somewhat like that existing in the iris; the third nerve exercising control over the circular fibres and the sympathetic over the radiating fibres. The former effects changes necessary in hyperopia and accommodation; the latter by tilting the lens effects changes which enable some hyperopic astigmatic eyes to have normal vision. Possibly there is a closer relation between the sympathetic nervous system and astigmatism than we have been wont to believe; small errors of oblique astigmatism are so annoying because of the inability of the organism to adjust itself to the error that reflex disturbances of other organs occur; this is not on the order of referred pain, as both Dr. Lebensohn and Dr. Percy and I have demonstrated, but is associated with actual

\*My sincerest appreciation is due Prof. A. J. Carlson, Chief of the Department of Physiology, University of Chicago, without whose cooperation and suggestion this work could not have been done.

demonstrable physiologic changes. One does not have to go to the lengths of some who claim systemic upsets from a few degrees of esophoria or exophoria, but the following case will show a definite relationship of a few degrees of hyperphoria: A prominent myopic lecturer was unable to speak before an audience because of sudden nausea and dizziness. He wore minus eight sphere with a small cylinder. His glasses had become bent so that one lens was 5 mm. higher than the other, and he had suddenly to overcome over 4 degrees prism vertically. His inability to do so entirely interfered with his lecture. Because of this same fact high degrees of anisometropic corrections are not well borne except in those who suppress one image. The reason more of us do not have upsets continually is because of the wonderful adaptability of this exquisitely arranged mechanism, the human body.

### THE LABILITY OF THE DIASTOLIC BLOOD PRESSURE IN EPILEPSY

A. M. P. SAUNDERS, M. D.\*

CHICAGO

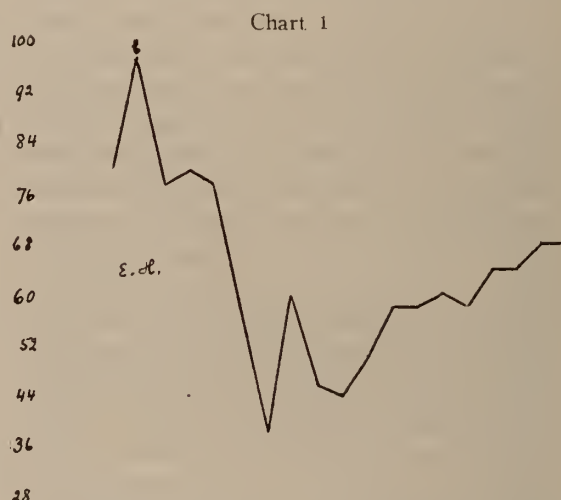
The layman may expect miraculous discoveries in the cause and cure of diseases to be handed out on a moment's notice, which will relieve all mankind of a certain affliction. The research worker, however, has been forced to realize that scientific facts are brought out only by persistent work and long observation and by comparing various functions of the normal body with that of an abnormal body.

The cause of idiopathic epilepsy has been one of the very elusive subject in investigative work. Of the abnormalities in the body of the epileptic the most constant is the inconstancy of physiological processes. In our recent work the lability of the diastolic blood pressure has been especially interesting.

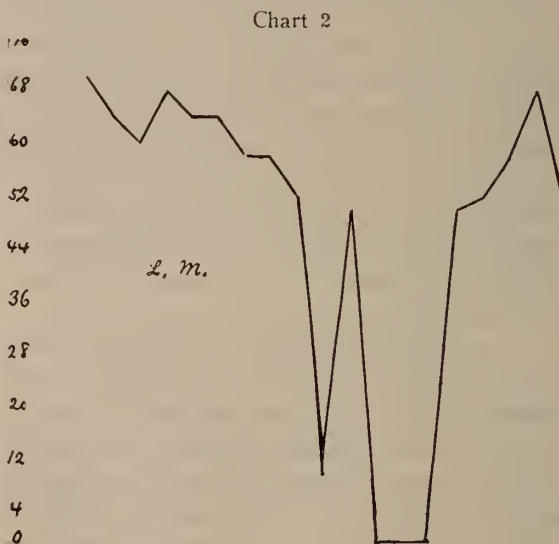
Little information can be obtained from literature as regards diastolic blood pressure because of lack of study of the subject. On account of many difficulties and errors inherent in older types of blood pressure instruments it has been an impossibility to measure the minimal or diastolic blood pressure with any approach to exactness, so that we had to be content with the registration of the systolic or maximal pressure. With the modern apparatus, however, we are enabled also to establish accurate estimation

of the diastolic pressure which is quite as important as the systolic.

The diastolic blood pressure is an indicator of the peripheral resistance and of the vaso motor tone. The latter has its center in the medulla and is regulated by the sympathetic nervous system and the glands of internal secretion (Dally's book on Low Blood Pressure). In the normal individual the diastolic blood pressure is con-



A graphic illustration of the range of diastolic pressures in a patient who had a convulsion.

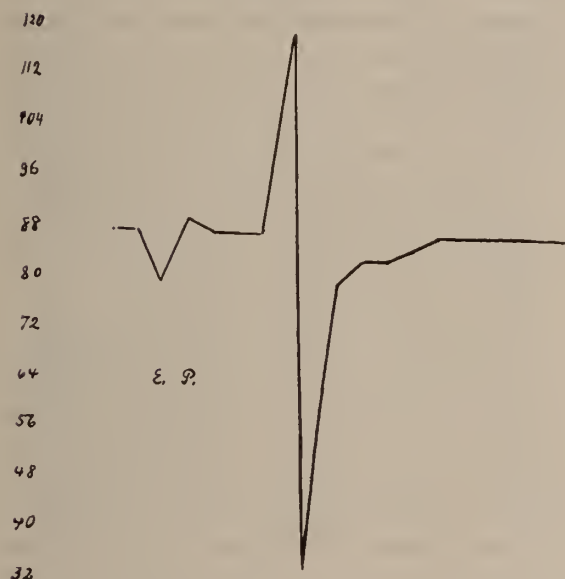


A graphic illustration of the fluctuations in diastolic pressure in a patient with frequent minor seizures. She was extremely irritable and resistive during the experiment. The pressure was low in the beginning but dropped to 12 mm Hg and finally even to zero. This latter reading was verified by a second physician. Subsequent careful examination of the heart did not reveal a definite cardiac or aortic lesion.

\*From the Illinois State Psychopathic Institute.

stant and not subject to transitory fluctuations as is the systolic blood pressure. Vaso constriction of the peripheral blood vessels increases the diastolic blood pressure while a vaso dilation reduces it.

Chart 3



In the graphic illustration above (Chart 3) one can see the most pronounced variation of the diastolic pressure curve. This extensive excursion lasted not more than from five to ten minutes and has not been observed again on the same patient on that day nor on the following day.

In our bedside work on epileptic patients a series of experiments were made to determine the average diastolic blood pressure and its constancy. The patients had been prepared by withdrawing all medication for several days and had been on a light diet the day before. The psychic elements of fear and apprehension were removed by the nurse whom the patients knew well and who told them exactly what was going to be done. During the experiment the patients were kept in bed, resting quietly. The blood pressure was taken every five minutes. This was continued for several hours. A mercurial manometer was used, each reading was rechecked at once in order to assure accuracy. Thirty patients were examined in that manner. Patients with convulsions as often as one or more a day and others with convulsions of only one in one or two months were selected. Two patients had a convulsion shortly before the experiment began

and one had an attack during the experiment.

Of the thirty patients, about twenty had a fairly constant diastolic pressure with a variation of four points or less during the time of examination. Of this class the readings in one patient were about as follows:

G. H.  
 10:30 A. M. 88 mm Hg.  
 10:35 A. M. 88 mm Hg.  
 10:40 A. M. 88 mm Hg.  
 10:45 A. M. 88 mm Hg.  
 10:50 A. M. 90 mm Hg.  
 10:55 A. M. 90 mm Hg.  
 11:00 A. M. 90 mm Hg.  
 11:05 A. M. 82 mm Hg.  
 11:10 A. M. 82 mm Hg.  
 11:15 A. M. 88 mm Hg.  
 11:20 A. M. 88 mm Hg.  
 11:25 A. M. 88 mm Hg.  
 11:30 A. M. 88 mm Hg.  
 11:35 A. M. 88 mm Hg.  
 11:40 A. M. 88 mm Hg.  
 etc.

Of the patients showing a more marked variation the readings were as follows in one of them:

A. K.  
 10:30 A. M. 70 mm Hg.  
 10:35 A. M. 80 mm Hg.  
 10:40 A. M. 78 mm Hg.  
 10:45 A. M. 78 mm Hg.  
 10:50 A. M. 82 mm Hg.  
 10:55 A. M. 84 mm Hg.  
 11:00 A. M. 74 mm Hg.  
 11:05 A. M. 80 mm Hg.  
 11:10 A. M. 80 mm Hg.  
 11:15 A. M. 76 mm Hg.  
 11:20 A. M. 76 mm Hg.  
 11:25 A. M. 76 mm Hg.  
 11:30 A. M. 76 mm Hg.  
 11:35 A. M. 76 mm Hg.  
 11:40 A. M. 80 mm Hg.  
 11:45 A. M. 78 mm Hg.  
 11:50 A. M. 76 mm Hg.  
 11:55 A. M. 70 mm Hg.  
 12:00 A. M. 76 mm Hg.  
 etc.

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### ACUTE GLAUCOMA\*

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One of the dreaded diseases of the eye, known since antiquity, probably more prevalent or at least more frequently recognized today, still remains a complex problem to the ophthalmologist and a serious menace to visual safety. By the

\*Read before Illinois State Medical Society, Section on Eye, Ear, Nose and Throat, May 9, 1928.



term glaucoma, we mean that condition of the eye wherein an excessive pressure is exerted by the intra-ocular fluids against the resistant external coats resulting in symptoms of visual disturbance. By the term acute glaucoma we mean, as a result of a rapid elevation of the intra-ocular pressure, symptoms of pain, ciliary injection

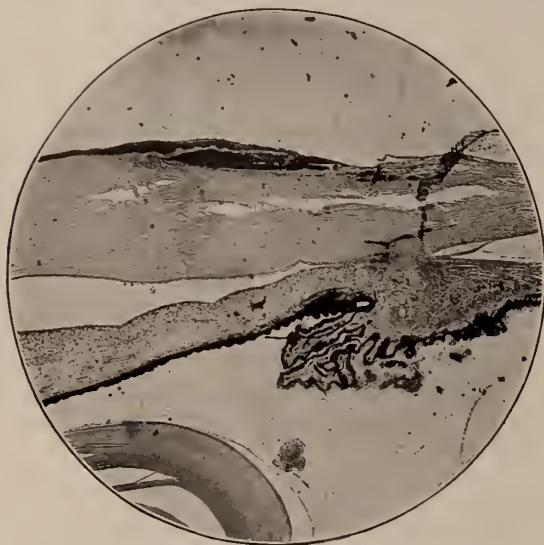


Fig. 1. A very early case of incomplete closure of drainage angle in acute glaucoma. Note swelling of ciliary body and iris. Root of iris is pushed forward, but not attached to posterior surface of cornea.

tion (corneo-scleral injection) and visual disturbances are precipitated.

Just how and why this rapid accumulation of fluids within the eye-ball takes place is still a debatable and open question. Many theories have been propounded on the various problems involved but only on one phase of the question are more authorities agreed, that is, that all the symptoms are the result of this excessive fluid accumulation.

The mechanics involved may be briefly summarized as follows: Aqueous humor production is the result of dialysis, diffusion or osmosis from the blood capillaries of the uveal tract, principally from the vessels making up the ciliary processes. (Most likely a dialysate.) The escape of this fluid is thought to be through the canal of Schlemm, but it is quite probable that the capillaries here too play an important part in resorbing this fluid. When the balance between this process of fluid production and escape is disturbed or broken there follows an accumulation of fluid within the eye-ball which must

naturally raise the intra-ocular pressure and glaucoma results. This is probably the result of a congestion or dilatation of the capillaries that largely form the ciliary processes, which swelling pushes the root of the iris forward against the cornea, thus closing off the drainage angle (Fig. 1). This is further accentuated by the pressure of the accumulated fluid against the resistant external capsule (cornea and sclera) which interferes with the free escape of the venous blood through the large venous channels (venae vorticosae). This venous stasis is followed by congestion of the anterior ciliary vessels, the capillary loops at the corneo-scleral circumference (ciliary injection) and as a result the cornea becomes edematous and hazy.<sup>1</sup>

It is probably uncommon to see a case of acute glaucoma in its pure form during its first attack. I am inclined to think that the majority of these cases are preceded by a disturbance of intra-ocular fluid balance with varying degrees of tension, which has existed but unrecognized for some time past. This may have been in the form of the non-congestive or simplex type or that state we are in the habit of referring to, as the prodromal stage. To this stage we have ascribed that state, that is characterized by the symptoms of transitory disturbances of vision, sometimes slight pain and injection and occasionally the perception of halos around lights. These symptoms are usually self-diagnosed by the patient, as due to a cold in the eye or a slight gastro-intestinal disturbance and are treated accordingly. However, as a rule these symptoms pass off in a short time, but recurrences usually take place and with each recurrence we find the symptoms becoming more severe and lasting over a longer period. Eventually the symptoms become persistent and severe, when a physician is consulted, and a diagnosis of acute glaucoma is made. As a matter of fact it is only the continuation of the same stage of intra-ocular fluid balance disturbance with tension which does not readily correct itself. Occasionally one sees an acute case suddenly precipitated during the course of some severe disease or following a major operation, but I am inclined to think that the vast majority of the so-called acute cases that we see are preceded by disturbances of intra-ocular fluid balance with an absence of congestive symptoms. Cases are seen with no con-

gestive symptoms, but pain may be present, but as that is purely a relative term we are compelled to depend on the presence or absence of ciliary injection and hazy cornea for our classification of acute glaucoma. This classification, it is true, is merely an arbitrary one, for it is at times impossible to definitely state whether we are dealing with an acute or chronic type of this disease.

As to the *etiology* of this disease or group of symptoms we choose to refer to as glaucoma, little may be said with any degree of finality. There is, however, much reason to believe that in the majority of these cases there probably exists a predisposing and a precipitating factor. The predisposing cause or causes is in all likelihood congenital, which may be of an anatomic or chemical character. By the anatomic character one may say that it is an eye so developed as to readily succumb to a fluid balance disturbance. By the chemical character we mean that state of the body fluids or cellular structure that may be readily disturbed by elements that enter the blood stream and produce a physio-chemical reaction of more or less intensity. This may be crudely compared to an allergy or an anaphylactic reaction.

As to the precipitating cause we must again assume an attitude of indefiniteness. It is quite probable that this factor finds its way into the blood stream; whether from the outside world as an exogenous toxine or from within the body as an endotoxine is, of course, an open question. We do know that many cases have been reported associated with acute epidemic diseases. Likewise is it common knowledge to find this disease precipitated by some marked emotional paroxysm. Whether this emotional disturbance acts primarily through the nervous or endocrine systems is not known, but may be surmised.

The general outline summarized in the preceding paragraphs as to the etiology being still debatable it will be sufficient at this time to discuss only that on which authorities are agreed, namely: the symptoms and their early recognition.

It being agreed that the symptoms are wholly dependent on the elevation of the intra-ocular pressure (tension) which is the result of a fluid production in excess of its ability to escape, therefore, upon the rapidity of this resultant fluid

accumulation will the intensity, degree and time of onset of the symptoms depend. If this fluid balance is only slightly disturbed the symptoms be so mild as to pass off almost unnoticed. The natural tendency of such a disturbance is to right itself or to accommodate itself to the new fluid status or tissue environment. If this disturbance is marked and a rapid fluid accumulation takes place the symptoms will naturally be

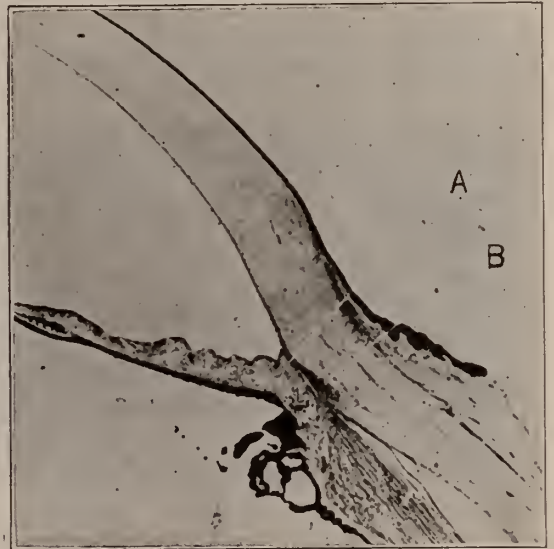


Fig. 2. Shows the angle of the anterior chamber from a case of recent glaucoma, it is occluded by the base of the iris, A, which is adherent to the posterior surface of the cornea. B points to the canal of Schlemm.

precipitated more rapidly and will be of a more violent character (Fig. 2).

The *intra-ocular pressure or tension* may be ascertained by digital palpation or the more refined method of tonometry. Digital palpation is more frequently used in office or bedside work, but the method of greater accuracy is found in the use of the tonometer.

Tension by digital palpation is ascertained as follows: The patient is requested to look down, the index finger of each hand of the physician is applied to the eye-ball and a slight pressure alternately exerted against it. The resistance of the eye-ball to this pressure is found to be greater when tension exists. To the experienced this is easily recognized, for the inexperienced it may be tried on a normal eye and comparisons made. These two methods are described in minute detail in all text-books on ophthalmology. The tension is invariably elevated, but it may be



of such a mild degree that a definite diagnosis cannot be made on this symptom alone.

As a result of this tension or pressure exerted by the intra-ocular fluids against the resistant external capsule there follows a venous congestion of the eye-ball which is recognized externally by injection of the small vessels at the corneo-scleral margin.

This ciliary injection at the corneal circumference is due to the venous stasis, the result of the intra-ocular pressure partially or wholly interfering with the escape of blood through the



Fig. 3. Edema of the cornea. From a glaucomatous eye. The epithelium is edematous; on the left the cells of the central layers are vacuolated; on the right the basal cells are elongated and vacuolated. A large vesicle is seen, the epithelium being raised by the accumulated fluid. The lamellæ are separated by fluid except at the posterior part.

venae vorticosae, and as a result the anterior ciliary vessels become congested. This injection must be differentiated from conjunctival injection, the latter manifesting itself to a much greater degree in the fornix. (Conjunctiva reflected from lids to eye-ball.) If both conjunctival and ciliary injection is present there will be found an area of lesser injection between these two regions. Deep ciliary injection may also be differentiated from conjunctival injection by the instillation of one or two drops of epinephrin (1-1000). This will blanch the conjunctival vessels very rapidly but the ciliary vessels will be only slightly altered.

*The pain*, which may also be of slow or sudden onset, depends largely on the rapidity of the elevation of the intra-ocular pressure and the compression of the sensory nerves of the ciliary body and iris. If the onset of the pressure is

slow the pain will be moderate, but if rapid the pain may be sudden and very severe. This pain is described as of a continuous boring character without remissions and is only slightly relieved by analgesics. In contra-distinction to the pain of iritis which is usually remittent and more severe at night.

The visual disturbance in this type of glaucoma may also be of slow or sudden onset and likewise depend on the rapidity of the rise of the intra-ocular pressure. The cornea having no direct blood supply but receiving its nutrition by a process of osmosis or dialysis is naturally readily affected by a disturbance of the vessels in its immediate vicinity, that is the source of its nutrition.<sup>2</sup> As a result of the congestion of the anterior ciliary vessels at its circumference the cornea becomes edematous thus interfering with its normal transparency and luster. If we now examine the cornea carefully under proper magnification, we will find that it is hazy and the surface finely irregular, the degree of haziness and surface irregularity depending entirely on the degree of edema present, the result of the tension or pressure and how long it has existed. If this pressure is rapidly lowered by tapping the anterior chamber, the cornea will immediately clear up, indicating that it is due to edema and not the result of an inflammatory process (Fig. 3).

The normal cornea is a highly sensitive tissue, but when subjected to the pressure usually found in glaucoma it loses much of this sensitivity. Thus, if the cornea is now lightly brushed with a wisp of cotton it will be noted that it may be slightly or wholly lacking in sensation.

If the edema of the cornea is not marked so that the deeper structures can be seen, it will be found that the anterior chamber (space between iris and cornea) may be extremely or only moderately shallow; the iris somewhat dilated and reacts sluggishly to light. Sometimes the iris is eccentrically dilated and of a muggy-off color, this latter symptom may only be due to its appearance as seen through a hazy cornea.

*Cupping of the disc or nerve head.* This symptom is always mentioned in every treatise as one of the cardinal symptoms of glaucoma. This is true in the chronic and non-congestive types, but



may be wholly absent in the acute type. If it is present in this type one can rarely see it, owing to the hazy condition of the cornea which will not permit a view of the deeper structures with the ophthalmoscope. When the cornea clears up one will more frequently see a congestion of the vessels particularly in the region of the nerve head. If the condition has existed for some time and the circulation has accommodated itself to its new environment the classical cupping of the disc will be noted, but this is usually found in the chronic stage.

*Perimetry* may be referred to but readily dismissed as of little or no value as an aid to diagnosis in this type for the same reasons enumerated in the preceding paragraph, namely; hazy cornea. It is of the utmost value during the prodromal stage and in other types of glaucoma. Roughly outlining the field of vision with a candle or the hand is resorted to by some, but I can see no value in this procedure in this type.

*Diagnosis.* This is made on the symptoms previously enumerated, the most prominent of which are tension, shallow anterior chamber, and a hazy cornea. The tension may sometimes be in doubt even with the use of the tonometer. A clinically hazy cornea may have to be differentiated from old diffuse opacities of the cornea or an interstitial keratitis, but if one can feel certain that the haziness is due to edema, one may be sure that the nutrition of the cornea is disturbed. This may be best ascertained by the use of the loupe with good illumination. The corneal epithelium is finely granular and the edema quite evenly distributed and appears like very fine grayish droplets of dew. Interstitial keratitis is usually seen in early youth and should be excluded very easily. The subjective symptom of seeing a halo around a light is most likely due to the edema of the cornea, and should be accorded the import manifested by the intelligence of the patient. The diagnosis in the typical case should not be difficult, but in the border-line cases, the presence of a suspicious tension, the finding of corneal epithelial roughening may be in itself sufficient to make a tentative diagnosis. This may be later supplemented by a careful perimetry and mapping of the blind spot of Marriotte which may be enlarged.

The early subjective symptoms of transitory

disturbance of vision, the seeing of a halo around a light and occasional redness of the eye should be sufficient to warrant a very careful and detail examination of such a patient.

*The treatment* is divided into (a) the immediate and (b) the permanent relief of the abnormal intra-ocular pressure or tension which may be medicinal or surgical. Eserine in one-half per cent solution is still the most useful drug at our command and should be immediately instilled into the eye and as frequently as necessary. Hydragogue cathartics and active diaphoretics should be used freely. Pilocarpine sweats may be resorted to if there are no cardiac contra-indications. The patient may be dehydrated as rapidly as possible by various methods at our disposal, e. g., intra-venous injections of hyper-tonic salt solution, glucose, etc., or hyper-tonic solutions of magnesium sulphate by proctoclysis. Glaucozan may be instilled in the eye in place of eserine. In the writer's experience, which covers a period of over twenty years as a member of the staff of the Illinois Charitable Eye and Ear Infirmary, the local use of eserine and later pilocarpine, sweats, and catharsis have been of the most value from the medicinal standpoint. Surgery will usually have to be resorted to eventually for the permanent comfort and visual safety of the eye. It is preferable to operate when the acute symptoms have subsided, but if the pressure cannot be controlled by medicinal therapy, anterior or posterior sclerotomy may be adopted. Preference should be given the anterior sclerotomy. As soon as the acute symptoms have subsided one must recommend some surgical procedure to aid the apparent inadequate fluid escape from the eye through the natural channels. Many operations have been devised for this purpose as described in text-books and monographs in existence. The writer for the past eight or nine years has almost limited his work to the use of the iridotaxis operation<sup>3</sup> where it is at all possible to grasp the iris, with very happy results.

104 S. Michigan Ave.

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## THE TREATMENT OF VARICOSE VEINS AND ULCERS\*

G. DE TAKATS, M. D. V. F. A. C. S.

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In the last three years over five hundred cases of varicose veins and their various complications have been observed and treated at this clinic. All stages from a beginning isolated varix to a progressing dilatation of the saphenous trunk, massive varicosities below and above the knee, acute superficial phlebitis, chronic phlebitic indurations, livid, eczematous areas of skin around single or multiple ulcers, periosteal thickenings of both tibia and fibula could be seen. Seventy-five per cent. of our cases have developed their first symptoms below the age of thirty. From then on the disease progresses and finally becomes in later life a real social problem, incapacitating the patient and throwing an immense burden on hospitals and clinics. The chronic varicose ulcer, wandering from one hospital or clinic to the other is a true "crux medicorum."

It is usually assumed that women are more frequently affected by the disease than men, due to the influence of pregnancy. In our series 59 per cent. were females and 41 per cent. were males. It must be remembered, however, that we saw a group of young women, with beginning varicosities, seeking advice for cosmetic reasons at a stage when men would not consult a physician.

Before deciding on the type of management, both arterial and venous circulation should be tested. It is worth while to investigate the pulsation of the femoral, popliteal, posterior tibial and dorsalis pedis arteries. Not infrequently, in older individuals, the varicose syndrome is associated with peripheral arteriosclerosis. In one case a complete obliteration of the popliteal artery with gangrene over the anterior tibial surface had been treated as a varicose ulcer by several physicians. Also in the true varicose ulcer the sclerotic arteries of older individuals surely add to the delay in healing.

The venous circulation is tested by Trendelenburg's method. The patient's leg is well ele-

vated, after which the varices empty. Next the proximal end of the great saphenous vein below Poupart's ligament is compressed and the patient is asked to stand up. If the veins remain empty but fill up with a gush of blood from above when the compression is relieved, the test is positive for valvular incompetence of the great saphenous vein. If the veins fill up suddenly on standing before the compression is relieved, the anastomoses with the deep veins must be insufficient. If now the compression is relieved and the veins become still more prominent the test is doubly positive for incompetence of both the saphenous and anastomotic valves. Finally, if after elevation and compression the veins fill up slowly from below on standing and do not dilate more after relieving the pressure, the test is negative, the valves are competent.

It is very important to test the deep circulation for patency. If there is no swelling around the ankle or calf in spite of marked varicosities, we can be sure that the deep venous circulation is functioning, because the circulation in the dilated superficial system is reversed in the upright position and does not function. We have demonstrated this in our clinic by direct measurements of venous pressure. If there is some edema of the calf and ankle it is advisable to apply a moderately tight elastic bandage from ankle to knee joint, which should compress the superficial veins. In almost every case the patient experiences relief from this support; but if his deep venous system is thrombosed and the saphenous system is the main channel of venous return, the patient will complain of pain and the swelling below the ankle will increase. In such a case, it is a grave mistake to excise or obliterate the veins in any possible manner, as the deep veins are thrombosed and the superficial dilatation is compensatory.

*The management* of patients afflicted with varicose veins and their complications must be individualizing. For the early, beginning dilatations on the calf, where the venous pressure is not very high and where no marked dilatation is present above the knee joint, the injection treatment has given excellent results. If there is also a well palpable saphenous trunk above the knee, we tie this vein in the ambulant patient without hospitalization, and follow up this ligation with injections on the calf. If there are

\*Clinic held at Northwestern University Medical School at the meeting of the Illinois State Medical Society, Chicago, May 9, 1928.



extensive varicosities both below and above the knee joint a radical excision is made, preceded by a high ligation close to the sapheno-femoral juncture. The same three types of treatment are carried out in varicose ulcers, depending on the site and involvement of the veins above the ulcer. It seems quite illogical to treat the ulcer with antiseptic dressings, powders, cargile membranes and many other methods none of which treat the cause of the ulcer, viz., the increased back pressure in the veins, which results in an accumulation of carbon dioxide, diminution of oxygen supply, resulting in poor nutrition. Besides the injection treatment, Unna's paste boots\* are applied weekly in the ulcer cases. This gives the most elastic and plastic form of support to the veins, but is only considered as a temporary support. It is true that ulcers will also heal if only paste-boots are applied or if the patient can afford a rest in bed for several weeks, but the dilated veins will cause a recurrence of the ulcer and favor a progress of the disease, unless they are injected or excised. The only indication for putting the patient to bed with a varicose ulcer is an acute phlebitis, which is very painful. But even these patients are allowed to get up with a paste-boot as soon as the fever and pain subside. We have found it very helpful to compress the saphenous trunk above the phlebitic induration with a cotton plug, or possibly tie the vein above the inflamed area, as a safeguard against pulmonary embolism.

The entire management of these cases, with the exception of the radical excisions, is carried out on ambulatory patients, the great advantages of which need hardly be emphasized.

The following method of *injection treatment* has been gradually evolved in our clinic during the last two years: The patient is examined in the standing position and the most peripheral dilatation above the ankle is selected for injection. A segment of the vein is isolated between the second and third fingers of the left hand. The patient's leg is now brought to a horizontal position, the skin rubbed with alcohol and a fine 24 gauge needle on a 10 cubic centimeter Luer syringe is inserted into the vein, which is immediately aspirated for blood. Only in case of

free flow of blood is the injection permissible. From five to ten cubic centimeters of a 50 percent. glucose solution are slowly injected. The needle is kept in the vein and the compression below and above is maintained for another two minutes. After withdrawing the needle a cotton plug is pressed against the injected vein and is kept in place with tightly drawn strips of adhesive. This should not be removed for at least 48 hours following the injection. Usually one more injection is given at the same time, three to four centimeters higher. The injections are repeated bi-weekly. An elastic bandage is advisable during the entire course of treatment. Massive injections of 40 to 80 cubic centimeters with or without preliminary ligation of the vein proximal to the injection have been avoided.

Our histologic studies of injected veins show that in most cases a firmly adherent, rapidly organizing thrombus results, which obliterates the lumen of the vein completely and acts exactly as a ligation does in relieving back pressure. In some cases, if the compression is firm enough, a direct obliteration may be obtained, as the damaged intimal layers are held together by a fibrinous exudate.

If the glucose is deposited beside the vein or leaks out of the vein, no necrosis ensues, but an infiltration may be present for a few days. Hypertonic solutions of sodium chloride and salicylate, however, will cause necrosis, and we have avoided their use.

Contraindicated in this form of treatment in 1, acute superficial phlebitis, 2 in deep thrombosis, 3 in valvular incompetence of the anastomotic veins.

In spite of advanced age or diabetes, cardiorenal patients, have been injected without any untoward symptoms. We have treated ten patients with a systolic pressure over 180, two diabetics, and one with postencephalitic Parkinsonism. It is exactly in such conditions that the injection treatment is of great advantage.

*Ambulatory ligations of the great saphenous vein* have been performed, if a venous trunk was well palpable, usually about a hand width above the inner condyle. Under local anesthesia the vein was exposed, with a small transverse incision, double ligated and cut. The skin was closed with a few interrupted dermal sutures. If, however, the varicosities show a marked reflux

\*A modified useful formula is the following: Zinc oxide 100; Gelatin 200; Aquae 300; Glycerin 400 parts. This mixture dissolves more readily and can be painted more easily on the unshaved leg, than Unna's original paste.



from the deep veins, the patient was hospitalized and a high saphenous ligation, three fingers' width below Poupart's ligament, followed by a radical excision from Poupart's ligament to the ankle is done. Usually one can strip the vein with Babcock's instrument from the upper incision to the level of the knee joint. Sometimes it may be possible to do the same on the calf, so that there will only result three small transverse incisions, one below Poupart's ligament, one above the inner femoral condyl, and one above the inner ankle. Ordinarily, however, it is necessary to dissect out the tortuous varicosities on the calf from one or two longitudinal incisions.

The after treatment tends to avoid any stasis in the femoral or pelvic veins that might give rise to a massive thrombus, which again would cause pulmonary embolism. The patient's leg is tightly bandaged but not elevated, the operation is done under local anesthesia, the patient may sit up in bed the day after the operation and if there is no sign of femoral or iliac thrombosis, may be up in a chair the fifth day. Elastic bandages must be worn from two to three months after the operation.

The results of such individualizing form of treatment are very gratifying. Up to the present time over four thousand injections have been made. There were no necroses, no embolisms. In two cases a local periphlebitis flared up, which subsided promptly under paste-boot treatment. Occasionally if the varix was very large, two to three injections were necessary to obliterate the vein. In combination with the injections, ambulatory ligations have been made in sixty-one cases. Radical excision was only performed in eleven of the 500 cases.

A possibility of an embolism arising from the site of injection has to be considered.\* In view of the firm adherence of the thrombus, of the ambulatory management of these patients, furthermore observing the precaution of not injecting above the knee or in the popliteal space, I believe that the danger is minimal, not greater than after any minor operation. Compared with the radical excision, the injection treatment appears particularly in a favorable light. Few men realize the high incidence of fatal embolism following radical excisions. It is about 0.7 per cent,

calculated from two recent, very reliable statistics of Berntsen and Prochnow.

As to late results, we know that only five years results are worth estimating, because the percentage of recurrences increases from year to year at first. Even after the most radical excisions, the percentage of cures is only about 75 per cent. Recurrences may also be expected after injection treatment, but in that case the initial risk and loss of time was small and the injections can easily be repeated.

#### SUMMARY:

1. The importance of testing both arterial and venous circulation in the presence of varicose veins is emphasized.

2. The management of such patients must be individualizing. Supporting measures, the injection treatment, ambulatory ligation and radical excision, alone or combined, all have their definite place in treatment.

3. The technique, indications, contraindications, results, and dangers of the injection treatment and surgical treatment are briefly discussed. If certain precautions are observed, the injection treatment is of great economic and time saving value and offers a smaller percentage of untoward results, than if the veins were left untreated.

122 South Michigan Avenue.

## PRE-MALIGNANT DISEASE OF THE SIGMOID AND RECTUM

CLEMENT L. MARTIN, M. D.

CHICAGO

Cancer of the rectum and sigmoid often develops without any preceding gross lesion, but in some diseases of the terminal bowel the disease itself is warning that cancer either may or is apt to develop.

Adenomas in this region are likely to become carcinomatous; many at the time of examination have definite microscopic evidences of a tendency toward cancer; some are cancer. Severe long standing proctosigmoiditis, for example, that occurring late in chronic ulcerative colitis, may predispose the tissue of the bowel wall to cancer.

It is a matter of general interest whether hemorrhoids, fistula, and fissures become carcinomatous. As chronic irritation is a factor in the production of malignant change, much has

\*A detailed study of this question, together with results of clinical investigation on varicose veins has appeared in the Journal of the American Medical Association, March 9, 1929.

been written about the irritation of chronic inflammation of the anus and lower rectum in relation to cancer here.

Chronic inflammatory diseases of the anus and lower rectum are often included among pre-malignant lesions with doubtful accuracy. One author states: "Benign tumors, ulceration, chronic eczematous conditions, long standing piles, cutaneous tags, tracts of old fistulae and other lesions about the anus and rectum have a tendency to undergo malignant change due to chronic irritation." Similar, though less inclusive statements are often seen. Among the laity it is a rather common belief that piles may become cancer. In parenthesis, a rational fear of rectal cancer on the part of the public is quite necessary as the majority of cases are in-operable when first diagnosed. But especially a change of bowel habits, constipation developing in the middle aged whose bowel movements were previously regular and rectal bleeding are the danger signals that should be emphasized.

Carcinoma usually occurs in the middle or upper rectum, above the area involved by hemorrhoids or fistulae. In only a minority of cases does the growth originate in the last two inches of the rectum. Cancer (epithelioma) of the anus is comparatively infrequent (3-4%). If hemorrhoids, fistulae and fissures were frequent causes of carcinoma, it should occur more often at the anus and in the lower rectum. Malignant changes in old hemorrhoids and fistulous tracts do occur and are reported but this is rare in proportion to inflammatory anal disease. Lockhart-Mummery notes this change in but two of the great number of fistula cases he has had. Ewing writes: "The relation between fistulae in ano, fissure and other chronic diseases of the rectum with carcinoma appears to be very uncertain. It seems that a great majority of cancer cases in this region arise apart from these diseases. Anatomical abnormalities and local predisposition, the nature of which we do not understand are more important factors."

Broders states: "I am of the opinion that such conditions as chronic eczema, long standing hemorrhoids, cutaneous tags, old fistulous tracts and fissures have very little to do with the causation of cancer. Benign tumors should be considered in a different light; however with the exception of adenomas too much emphasis

has been laid on their tendency to malignancy. Adenomas of the rectum do have a tendency to become malignant in a rather high proportion of cases."

Kraske some years ago wrote that he was unable to find any relation between hemorrhoids and cancer.

In brief, if there is any causal relationship between hemorrhoids, fistulae and fissures and



Fig. 1. A common type of rectal adenoma (polyp).

rectal cancer, it is not known, but it is known that these diseases do not often result in cancer.

*Chronic Rectal Inflammation.* Long standing severe inflammation may predispose the rectum and sigmoid to cancer.

Bargen has reported recently that out of 800 cases of chronic ulcerative colitis 20, or 2.5%, developed cancer of the colon. Seven of these cases had a carcinomatous mass visible through the proctoscope and in seven other cases the carcinoma was revealed by roentgenogram and there were benign polyps in the rectum. In six cases carcinoma was multiple in the colon and in one there was diffuse carcinomatosis of the wall of the entire colon.

Multiple adenoma (polyposis) occurs in 14% of the cases in the late stages of chronic ulcerative colitis. The incidence of malignancy



in multiple adenoma is high; various authors place this incidence at 25 to 75%. Quenu and Landel report 50%; Döring and Soper 43%. Tuttle 75%, Lockhart, Mummery "the majority." Figures of the more recent authors are lower. Struthers found 32% and David "not more than 25% are malignant at the time of observation."

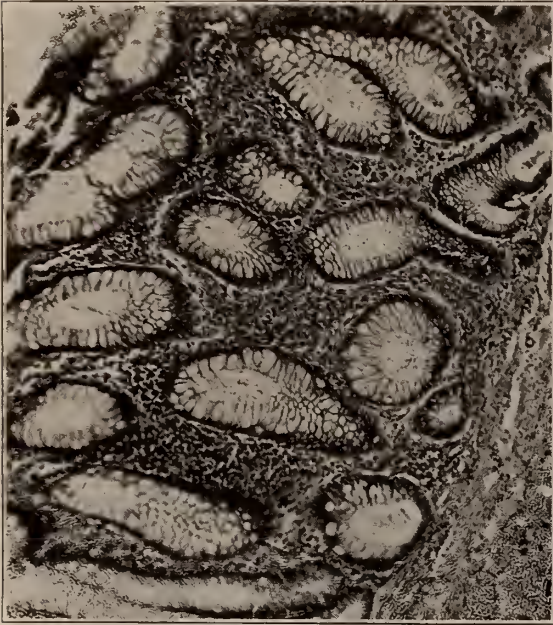


Fig. 2. Rectal adenoma x 67. Benign, no tendency to cancer.

It is probably true that the majority become cancer, as one authority states. If this digression be permitted, it is of clinical interest that carcinoma supervening upon severe chronic inflammation of the terminal colon usually causes a definite change in the clinical picture; an increase in the diarrhea or the amount of blood in the stool, at times more abdominal pain, obstructive symptoms, increased loss of weight, greater pallor and in late stages cachexia. Summarizing this aspect of the subject, advanced chronic inflammation of the sigmoid and rectum may undergo malignant change, but from the data available, it does not appear to do this frequently. When such chronic inflammation is associated with multiple adenomas, cancer often, perhaps usually develops.

**Polyps.** An inquiry into definitely pre-malignant disease of the rectum and sigmoid becomes chiefly a study of polyps. The vast majority of polyps in this region are adenoma, the others are lipoma, myxoma, fibroma, adenofibroma, and an-

gioma. A small intrarectal meningocele was reported as a polyp. The term polyp is a generic one, applied indifferently to a variety of intestinal neoplasms. We are here considering only adenoma. They may be either benign or malignant and many of them occupy an intermediate position, not carcinoma but showing a tendency to become carcinoma. They are of interest also because they are often confused with hypertrophied anal papillae, because hemorrhoidectomy is performed for the relief of bleeding when the trouble is really caused by an adenoma and because adenomatosis (polyposis) is not infrequently called carcinoma.

Adenoma is chiefly a disease of the large intestine, particularly of the sigmoid and rectum; 63% of intestinal polyps are in the rectum (Dewis). It is estimated they occur in 0.64% of patients examined for rectal complaints. The cause is not known. The age incidence of adenoma is about 5 years earlier than that of can-



Fig. 3. Carcinomatous adenoma of rectum x 100.

cer. The period of greatest incidence is from 50 to 60 years of age.

**Symptoms:** Bleeding or diarrhea are the chief symptoms. Small adenomas 0.5 cm or less in diameter are often without symptoms. The larger adenoma, over 1.5 cm in diameter, usually is indicated by bleeding or diarrhea or both; if



either is present alone, blood per rectum is more apt to be the symptom. Constipation is sometimes present. Protrusion through the anus of a pedunculated low rectal growth may occur and clear up the diagnosis. The larger neoplasms in the upper rectum and sigmoid may give a definite syndrome, e. g. lower left quadrant pain and diarrhea, sometimes with cramps and bleeding per rectum, i. e. the same symptoms any partially obstructive sigmoid or rectal neoplasm may give, but on the other hand a 2.5 cm or larger growth may be present without any such definite manifestations. An x-ray of the colon is of limited diagnostic value; proctoscopic examination is required. When examined microscopically, the striking characteristic of a series of adenomas from the lower part of the intestine is the variation from benignity to malignancy. All shades of changes are found from the most obviously benign adenomatous structure to a definite carcinoma of low malignancy. The accompanying photo-micrographs show a markedly benign and a definitely malignant adenoma.

It is by means of the appearance of the epithelium alone that the diagnosis of malignancy is made in these cases. The closer the epithelial cells approach the size, shape, arrangement and staining qualities of normal cells the more benign they are. In other words, the more differentiated the epithelial cells are the more benign they are. Rupture of the basement membrane and escape of the cells into the subepithelial tissue is not the criterion of malignancy in these growths. Figure 2 illustrates a section from a markedly benign adenoma, it is seen that the epithelium is highly differentiated, and functioning normally in the production of mucus. There is a marked lack of cellular vegetative activity. Such tissue evidences no tendency toward cancer. The tissue illustrated in Figure 3 is cancer. Marked loss of differentiation is evident in the epithelium. Individual cells are not distinguishable in places, the nuclei are not uniformly arranged near the base of the cell but lie at various levels. New large cells with irregular and deeply staining nuclei are present. Most of the adenomas I have examined are between the two extremes illustrated, less obviously benign than the specimen shown in Figure 2 and less malignant than in Figure 3. It is striking that most of these adenomas show a

tendency toward malignancy. It is still a question just how many adenomas start as benign and later become malignant tissue. The problem is further involved because we do not know just how many carcinomatous adenomas were of that character from the beginning. It is seen from a study of a number of these tumors that they do have a tendency to become carcinoma, and it is unquestionably true that a large percentage of adenomas do become malignant.

#### CONCLUSION

Hemorrhoids, fissures and anal fistulae do not often result in cancer. This is probably true of chronic severe inflammation of the sigmoid and rectum when not associated with multiple adenomas.

After investigating a series of adenomas of the sigmoid and rectum, I believe the following conclusions may be made:

1. The larger adenoma, 2 cm or more in diameter, is generally but not invariably carcinomatous, and the carcinomatous adenoma is usually single and generally of a red meaty appearance.
2. The percentage of multiple adenomas which undergo malignant change is high.
3. Adenomas of the rectum and sigmoid have a gradation toward malignancy and when they undergo malignant change they become low grade carcinomas.

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#### THE ROLE OF THE UROLOGIST IN GENERAL DIAGNOSIS\*

HERMAN L. KRETSCHMER, M. D.

CHICAGO

(Continued from page 72)

#### MALIGNANT ENDOCARDITIS

It is perfectly true that cases of malignant endocarditis rarely present themselves as urological cases, but that this is possible and that it does occur will be illustrated by the following case in which the preponderance of symptoms were urinary in character and the patient was sent in with a diagnosis of pyelitis and the request that pelvic lavage be instituted.

Case No. 3. C. H. T., male, aged twenty-one, complained of frequency and pain on urination, hematuria, and loss of weight.

Four months before coming under observation the

patient was ill with fever which followed swimming in polluted water. A diagnosis of typhoid fever was made. Three months later patient began to have pain on urination, with some pain at the end of the penis. Burning on urination and patient was obliged to rise once at night. Once during his illness blood was present in the urine. He had lost ten pounds in weight.

Physical examination showed a well-developed young man, weighing 120 pounds. Head and neck, negative. Lungs, negative. Examination of the heart: A reduplication of the first tone and a systolic murmur which became increasingly louder toward the aortic region where there was also a soft blowing diastolic murmur.

Examination of the abdomen: Kidneys and spleen negative.

Cystoscopy showed bladder negative and ureters were catheterized without obstruction. Urine from right kidney sterile and free from pus. Cultures from right ureter sterile. Urine from left ureter: Pus cells and the culture showed streptococcus viridans. The Widal test, negative. Blood cultures: Streptococcus viridans.

Blood count: Hemoglobin 85 per cent., leucocytes 10,500.

The patient had many infected teeth which showed streptococcus viridans on culture when the teeth were removed.

The diagnosis of malignant endocarditis was perfectly obvious from the findings. The condition, however, was confused with chronic pyelitis because of the long-continued fever and the presence of pus in the urine.

Case No. 4. Mrs. D. D., aged thirty-two, referred by Dr. W. S. Wing.

Previous illnesses: Frequent attacks of tonsillitis during the past fifteen years.

Present complaint: Frequency of urination and pus in urine for five months, fatigue, pain in lower abdomen, chills and fever, and infected teeth.

Four months before coming under observation patient noticed that she was tired and became fatigued very easily. At that time experienced pain in the lumbar region—dull in character—when she was on her feet; not present when she lay down. Voided about once every hour, passing large amounts of urine. Pus in the urine for three months. Fifteen years ago a diagnosis of heart disease was made.

Physical examination: Head and neck, negative. Several teeth absent. One of her teeth had recently been extracted and from its socket a discharge exuded. Examination of the heart: Apex beat visible in 5th interspace, not diffuse; no thrill; a systolic murmur at apex transmitted into axillary space. Examination of abdomen negative. Extremities, negative.

Blood count: Whites 7,400; hemoglobin 55 per cent. Blood pressure: Systolic 118; diastolic 66. Thalein test: Appearance time five minutes, and a total output of 80 per cent. in an hour and a half.

Examination of the urine showed Gram negative rods, belonging to Alcaligenes Group, and B. Coli. Blood cultures showed streptococcus viridans.

Diagnosis: A diagnosis of malignant endocarditis was established.

Case No. 5. Miss G. S., aged twenty-five, single.

Previous illnesses: Patient stated she had scarlet fever when she was two years old, inflammatory rheumatism at the age of eight. The attack of inflammatory rheumatism lasted about two months, at which time a doctor told the family she had valvular disease of the heart and a weak heart. Appendix was removed ten years ago.

Present complaint: Frequency of urination, nocturia, pus in the urine, chills and fever, headache, malaise, nausea and vomiting, and feeling of weakness.

Six weeks before admission to the hospital she was suddenly seized with attacks of chills and fever, temperature rising as high as 102° F. The following evening, nausea and vomiting. Ill at home for ten days and then sent to a hospital for observation; remained for three days; pus found in several of the urinary specimens. While in the hospital began to have frequency of urination; urinated as often as twelve times a day and once at night.

General physical examination: A fairly well-developed and well-nourished body. Pupils: Equal and react to light. Eyes negative. Teeth in good repair. Thyroid negative.

Examination of the heart: The apex impulse was outside of the nipple line in the 4th interspace. At the apex, a soft systolic murmur; a doubtful presystolic murmur; no thrill.

Lungs negative. Spleen not palpated. Liver not enlarged. No petechiae. History of two sore fingers last week.

X-rays, negative for stone.

Blood chemistry: Urea nitrogen 13.56, uric acid 2.68, creatinin 1.14, non-protein nitrogen 28.28.

Blood cultures: Streptococcus viridans isolated.

Blood count: Reds, 4,816,000; whites, 9,100; hemoglobin, 65 per cent.

Diagnosis: A diagnosis of malignant endocarditis was made.

Case No. 6. A. S., aged twenty-two.

Present complaint: Painless hematuria of five months' duration, during which time the urine has never entirely cleared up; thinks that it is more bloody in the morning than at any other time. Never passed a clot of blood. No frequency of urination, no urinary symptoms.

Physical examination: Temperature 101, pulse 100, marked pallor of the skin and mucous membranes. Heart: Distinct apical pulsation in the fifth interspace, high accentuation of the second pulmonic, a mitral murmur and a slight murmur of aortic insufficiency. Lungs negative. Abdomen: A tumor mass in the left upper quadrant. Liver: Palpable below costal arch. Urinalysis: Bloody, Sp. gr. 1.015, acid, no sugar, albumin, red blood cells,



epithelial cells and leukocytes; no tubercle bacilli. Subsequent urinalysis showed granular casts.

Blood count: Hemoglobin, 60 per cent.; reds, 3,500,000; whites, 4,500.

Cystoscopy : Bladder negative. From the left ureteral orifice bloody urine emitted in spurts.

A tentative diagnosis of tumor of the left kidney, with bleeding, was made. It was then decided to inflate the colon. Colonic distention showed the tumor mass anterior to the colon, demonstrating that the tumor was not of renal origin, but splenic. Subsequent cystoscopy showed bleeding from the right side.

Post mortem: Chronic endocarditis of the mitral valve, enormously hypertrophied heart, enlargement of the mediastinal glands, cyanotic induration of the liver, chronic splenic tumor with infarcts, and bilateral hemorrhagic nephritis.

Case No. 7. Mr. P. W., referred by Dr. George Dick.

Present complaint: Hematuria, general weakness, nausea, cough, temperature, swelling of the ankles and excessive expectoration. Two years before admission began to feel a bit below par. One year later noticed that he did not have the same strength as before and four months before admission his general weakness became very pronounced. Daily temperature for four months; also a cough. Hematuria for about four weeks and swelling of the ankles for two weeks.

Examination by Dr. Dick: A few crepitant and subcrepitant rales in the apex of the right upper lobe. Heart: A palpable thrill over the apex; also a presystolic rumbling followed by a loud systolic murmur. The second aortic sound was accentuated.

X-rays: Negative for stones in the genito-urinary tract.

Urine: Albumin 2+ and blood 4+, a few finely and coarsely granular casts, many red blood cells and a few leucocytes.

Cystoscopy: Bladder negative. Ureters catheterized. Urine from the left catheter bloody; from the right blood tinged. Cultures, sterile. Smears for tubercle bacilli, negative. Blood cultures, negative.

Blood chemistry: Urea 204, uric acid 5.6, creatinin 6.2, total non-protein nitrogen 128. Pyelograms were not made.

The diagnosis was chronic thrombo-ulcerative endocarditis and hemorrhagic nephritis.

#### LESIONS OF THE GASTRO-INTESTINAL TRACT

Lesions of the gastro-intestinal tract constitute, perhaps, the most frequent group that must be differentiated and of these various lesions probably the most common of all is *appendicitis*. Its differentiation, while generally simple, is not made nearly so often as it should be, a fact that is evidenced by the large number of patients who

are seen each year by the urologist for the relief of urinary symptoms, in whom an appendectomy has failed to effect a cure. This point has been emphasized so often that it may be dismissed with one word of warning, to wit: at very rare

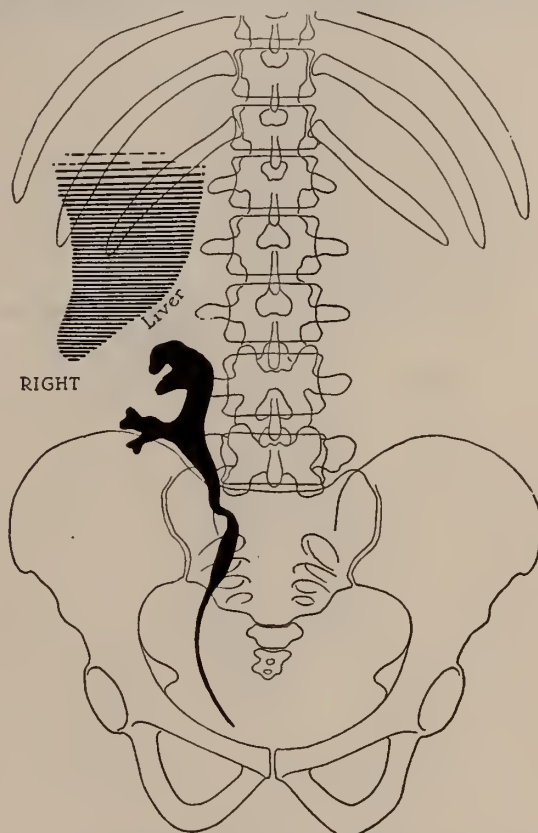


Fig. 3. Congenital dystopia of right kidney. Pyelogram was made to determine the cause of lower right quadrant swelling.

intervals the differentiation between acute appendicitis (with some blood cells and leucocytes in the urine) and an acute pyelitis may be extremely difficult. *Under these circumstances the patient should be given the benefit of the doubt and an exploratory done after ample consultation.*

It is easy to see how a mistake of this kind may be made; for example, take a patient who has had many attacks of pyelitis, such as relapsing pyelitis with each succeeding pregnancy. In case a patient of this type develops acute appendicitis, it is easy to understand how the attack may be overlooked, and the symptom-complex attributed to a lighting up of an old infection in the kidney pelvis.

### LESIONS OF THE GALL BLADDER

Chronic cholecystitis, with or without stones, may often be confused with lesions of the right kidney. While not at all common, cases have come under observation in which a double lesion was present, namely, stones in the right kidney

plus the other lesions of the genito-urinary tract other than stone, such as cases of hydronephrosis, with or without infection, strictures of the ureter, etc.

Case No. 8. Mrs. A. K., aged fifty. Six months before coming under observation the patient was operated upon for trouble in her right kidney. The nature of the operation was not known to the patient.

Previous history: Negative; also family history.

Present complaint: Pain in the right upper quadrant where is present a tender mass. Present illness began four and a half years ago. While washing, the patient was caught with a sudden, severe pain in the right flank, which recurred whenever she exercised. No relation to bowel movement. There has never been blood in the urine. Four years ago she noticed a tender mass in the abdomen—below the

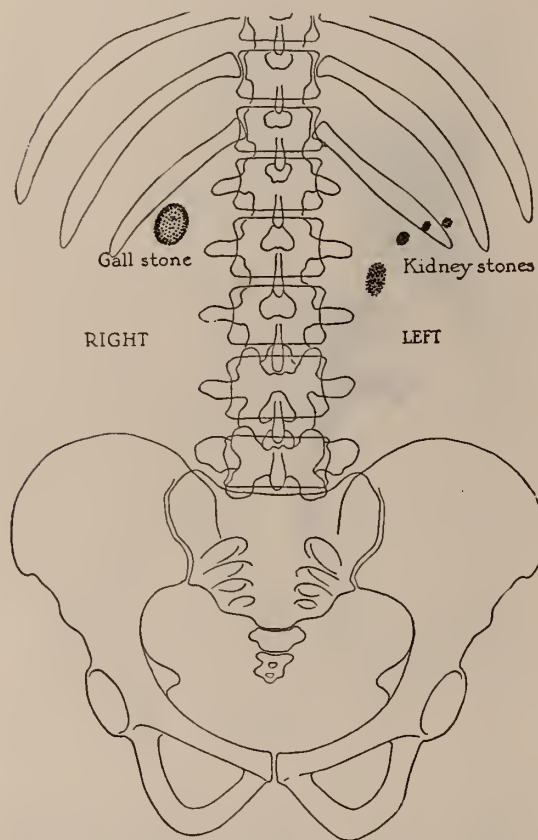


Fig. 4. Multiple kidney stones on left side. Solitary gall stone on right side.

and stones in the gall bladder. Since the advent of cholecystography, discovered by Graham of St. Louis and developed by him to a high degree of perfection, this sort of differential diagnosis has undoubtedly become simplified. Before Graham's epoch-making work, reliance had to be placed upon pyelograms.

This subject can best be discussed under the following three headings: 1. Cases of cholelithiasis which call for differentiation from kidney stone. 2. Cases in which both gall-stone and kidney stones are present in the same patient, a combination which brings up for discussion the number of symptoms due to the one lesion or the other. 3. Patients who have gall-stones

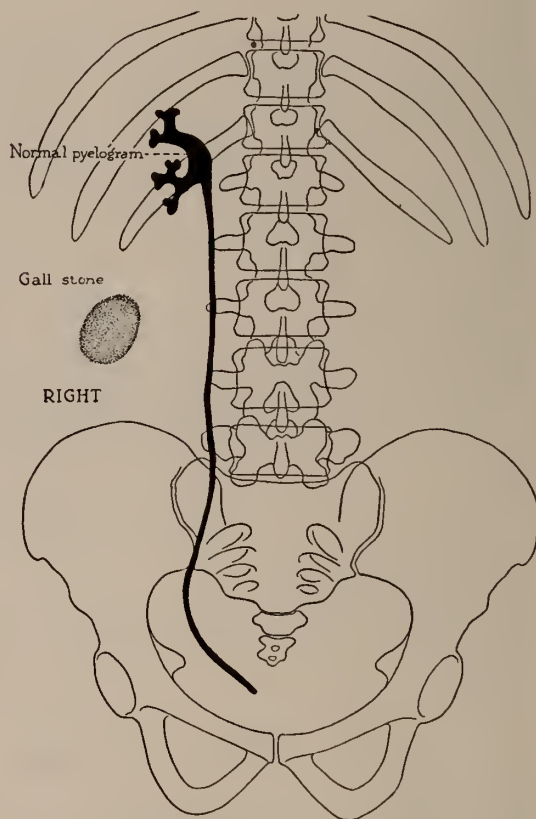


Fig. 5. Normal Pyelogram. Shadow under discus-sion due to large gall stone.

right costal margin. Tenderness has increased, but in her opinion the mass has not become larger.

Physical examination: Head and neck, negative. Abdomen: Smooth, palpable mass in the right upper quadrant, firm in consistency, but freely movable; slightly painful when moved. A more careful examination of the mass gave the impression as though the kidney can be palpated. Liver not felt. Spleen



not palpable. Left kidney negative.

Cystoscopic examination and ureteral catheterization, negative.

Pyelograms: Kidney pelvis at the level of the third lumbar and rather large; calyces within normal limits, findings negative.

Diagnosis: Chronic cholecystitis.

Operation showed the presence of a chronic cholecystitis.

The diagnosis in this case, namely, gall bladder disease, was made by exclusion, since the differential diagnosis involved the question of whether the tumor felt was kidney or gall bladder. The diagnosis of gall bladder lesion was made because of a normal pyelogram.

Case No. 9. R. F., aged forty-one, referred by Dr. Arthur Fischer.

Previous history: Negative.

Present complaint: Burning at neck of bladder,

fore coming under observation. Previous x-rays of the stomach were negative. Urgency of urination came on several weeks ago; in case the urine was not voided when he had the desire, a pain at the neck of bladder occurred.

Physical examination: Head and neck negative. Lungs negative. Heart: Extra systole followed by a long compensatory pause about every third beat;

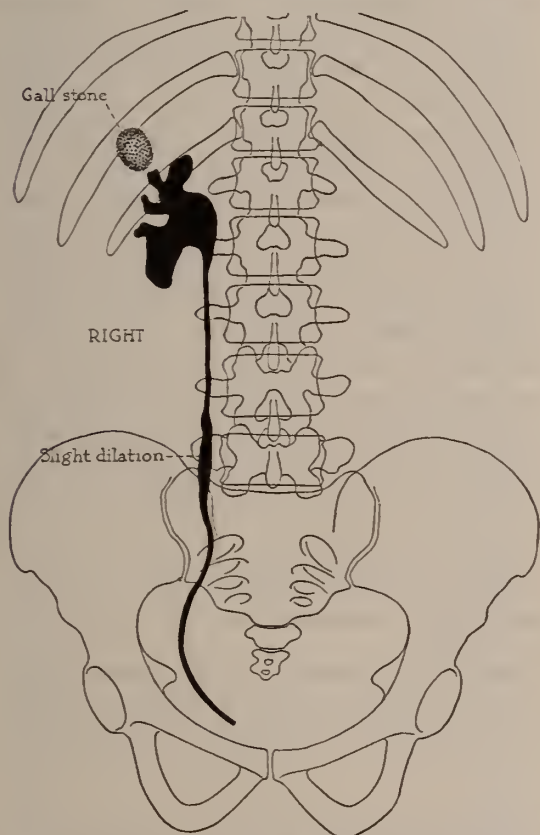


Fig. 6. Right pyelogram shows a slight hydronephrosis. Shadow under discussion, extra renal and due to gall stone, verified at operation.

dribbling at end of urination, urgency of urination, backache, burning in stomach, and gas in stomach and bowels.

The patient had been troubled with burning in the stomach and gas in bowels for about six years be-

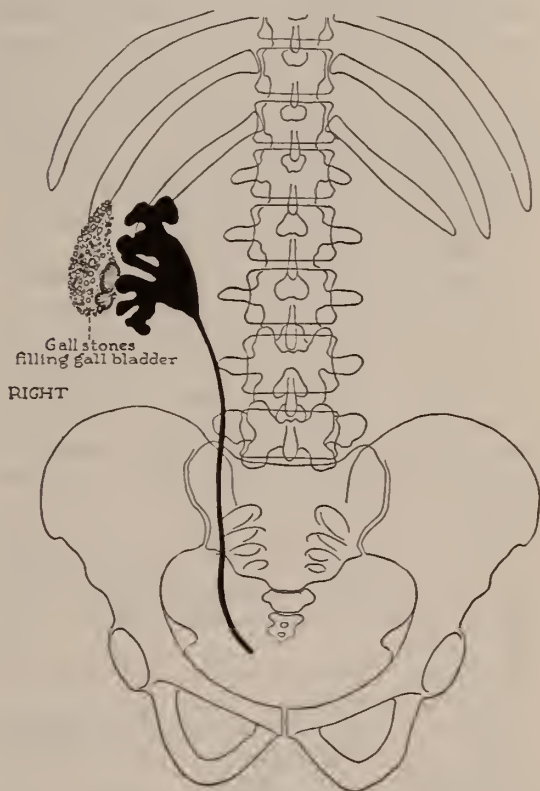


Fig. 7. Right hydronephrosis with infection. Gall bladder felt with stones. Operation: Removal of gall bladder and pelvic lavage for renal condition.

a soft to and fro brush over apex. Abdomen: Liver and spleen not palpable; no masses. Rectal: Negative.

Cystoscopic examination: Bladder negative except for a slight notch above; ureters normal.

Catheterized urines were free of pus and sterile upon culture.

Roentgenograms: Three round shadows a little smaller than a dime in the region of the right kidney. Pyelogram, right: A normal pelvis situated at some distance from the shadows. Blood count: Reds, 4,720,000; whites, 7,800; hemoglobin, 85 per cent.

Diagnosis: Cholelithiasis.

Case No. 10. Mrs. S. P., aged fifty-five, referred by Dr. R. Woodyatt.

Previous history: Patient was told three years ago she had diabetes.

Present complaint: Chill, pain on right side, burning on urination, frequency and nocturia.

Patient was in good health apparently until four days ago, when she had a chill followed by sharp pains radiating from the right flank to the perineum; also vomited. An aching pain in the right flank has continued. Nocturia occurred twice in the past two weeks. Burning on urination and nocturia have been present intermittently since seven years ago.

Physical examination: Head and neck, negative. Lungs, negative. Heart: A soft blowing systolic murmur heard over entire precordium and transmitted to left axilla. Abdomen: Spleen not palpable. Tenderness in right lumbar region posteriorly. Palpable right kidney which is irregular and hard. On the right side a large, smooth mass extending from the costal margin to the ileum.

Cystoscopic examination: Bladder negative, except that it is dislocated to the left.

Catheterized urines showed pus in the bladder, right and left kidneys and B. Coli on culture.

X-ray: Very large, soft part shadow filling the right side of abdomen from costal margin to crest of ilium. Some question whether this is large kidney outline or large right lobe of liver. Within the upper part of this area is a very dense shadow with smooth margins having the size and shape of gall bladder.

Pyelogram, right: The dense shadow having the appearance of gall bladder lies outside the greater part of the pyelogram shadow. Two large areas of decreased density within this heavy shadow. Pyelogram negative.

Blood count: 3,760,000 red cells, 10,800 leucocytes, 74 per cent. hemoglobin.

Diagnosis: Chronic cholecystitis and cholelithiasis.

Operation showed the presence of two hickory nut sized stones in the gall bladder.

Case No. 11. Mrs. M. B., aged thirty-nine, referred by Dr. Fred P. Patton.

Complaint: Acute attacks of pain in the right upper quadrant, nausea and vomiting.

For the past two and a half years the patient has had five attacks of pain in the the right upper quadrant localized chiefly under the ribs, but radiating through the back at the same level. No jaundice with attacks.

Physical examination: Head and neck, negative. Lungs, negative. Heart, negative. Abdomen: Slightly tender to deep palpation in epigastrium and right hypochondriac region. Severe tenderness in right lumbar region posteriorly upon deep palpation. Liver, spleen and kidneys negative.

Cystoscopy: Bladder negative. Ureters normal.

Catheterized urines were free of pus and sterile upon culture.

Pyelogram, right: Kidney pelvis at level of the first lumbar. Pyelogram within normal limits. Urter negative.

Blood count: 4,400,000 red cells; 13,000 leucocytes; 70 per cent. hemoglobin.

Diagnosis: Chronic cholecystitis and cholelithiasis.

Operation: Removal of gall bladder containing a large number of small stones.

#### LESIONS OF THE LIVER

*Prolapse of Liver.* A prolapsed kidney is rather common; on the other hand, a prolapsed liver occurs seldom. Therefore, under certain circumstances when a diagnosis, or a suspect diagnosis is made, of a ptosed organ, one would naturally be of the opinion that the palpable tumor in the right upper quadrant was kidney and not liver. Some confusion may arise in this differential diagnosis based upon physical signs, if the patient states that he passed bloody urine at some time prior to coming under observation. It would be easy, therefore, to couple the palpable mass in the right upper quadrant with the hematuria and to venture, for example, in an elderly person a diagnosis of malignant disease of the right kidney. This would appear to me almost conclusive evidence substantiating the diagnosis of malignant disease, and yet one might very easily be led astray to the extent of performing an operation upon the kidney when the kidney is clearly not the organ at fault. Differentiation, of course, can be made simply and easily by means of pyelogram. I shall report two cases of prolapse of the liver which we have had under observation. In each instance the diagnosis was made from the fact that the pyelogram showed the kidney to be normal and in its normal position, the x-ray exposures having been made both in the standing and lying positions.

Case No. 12. Miss W. W., aged forty years. Referred by Dr. D. P. Abbott.

Patient complained of pain in the right side, nausea, attacks of epigastric pain, and pain in left arm and shoulder.

Examination showed the head and neck negative. Heart and lungs negative. A firm, slightly tender mass was felt in the upper right quadrant. There was some respiratory mobility. Spleen and liver not palpated.

Cystoscopy: Bladder and ureteral orifices normal. Catheterized urines were free of pus and sterile upon culture.

Right pyelogram showed the kidney outlines visible and in normal position. Pelvis normal in outline and position. There was a fairly dense shadow which extended downward to the crest of the ilium. It seemed to be a prolongation of the liver shadow.

Blood count: Whites, 9,800; hemoglobin, 90 per cent.

Diagnosis: Ptosis or prolapse of liver.



Case No. 13. Mrs. M. B., aged sixty-two, referred by Dr. Wm. G. Willard.

Previous history: Negative except for rheumatism in shoulder and arm.

Present complaint: Hematuria, urgency, shortness of breath, weakness and tiredness, and loss of weight.

In the past year patient has lost 10 pounds, and has felt weak and tired without apparent cause. Ten days ago had a feeling of urgency every ten or fifteen minutes and would pass a small quantity of urine mixed with blood. The urgency was intense, and coincident with it there was a burning sensation in the bladder. Both urgency and burning sensation continued for ten days, and thereupon only the urgency, but this did not keep her awake at night. Prior to the attack, her habit was to get up once during the night to urinate, but during the attack she urinated twice. The urine came slowly and she had to force it out.

Physical examination: Eyes, negative. Heart and lungs, negative. Abdomen, rigid on both sides, but more on right than left. There was a hard mass in the right upper quadrant which produced tenderness upon pressure over the bladder; slight respiratory excursion.

Cystoscopic examination: Bladder capacity is good. It is normal except for prominent vessels on trigone. Both ureters catheterized without obstruction. Catheterized urines were free of pus and sterile upon culture.

X-rays: Negative for stone shadows in the urinary tract or gall bladder region. Kidney outlines within normal limits. A very long right lobe of the liver extended well down over the right crest of the ilium. The bones are atrophic.

Pyelogram, right: The kidney pelvis at the level of the first lumbar, and normal. Pelvis is rather long and at right angles with the upper end of the ureter. The superior calyx is perhaps a little broad and somewhat rounded. Otherwise pyelogram is within normal limits.

Blood count: Reds, 4,800,000; whites, 8,400; hemoglobin, 90 per cent. Blood pressure: Systolic 138, diastolic 84.

Blood chemistry: Urea 38.02, uric acid 2.76, creatinin .76, non-protein nitrogen 44.40.

Catheterized urines were free of pus and sterile upon culture.

Diagnosis: Prolapse of liver.

Besides prolapse of the liver there are other lesions of the liver that might very easily, under certain circumstances, call for differentiation from lesions in the right kidney, and this particularly in cases of tumor in which a differentiation between a tumor of the liver and kidney might be called for. And the reverse might be true under certain circumstances in which tumor of the liver might readily and logically call for

a differential diagnosis between liver and kidney. On the other hand, a patient might have a lesion of the right kidney and at the same time be suffering from a lesion of the liver, under which circumstances two diagnoses are necessary. In those instances in which a patient has a very fat abdominal wall and necessarily palpation is exceedingly difficult, this procedure is far from being an important factor in establishing a differential diagnosis.

Case No. 14. Mrs. M. C., aged sixty-five, referred by the late Dr. B. W. Sippy, complained of pain in the abdomen, nausea and vomiting. Ten days before admission to the hospital patient complained of a severe pain in the abdomen which began on the right side and was located along the lower rib margin. The pain did not radiate downward. She had had four attacks of pain since the onset of her first attack. A year before there was pain of short duration in the abdomen. During some of the attacks nausea and vomiting occurred.

General physical examination by Dr. B. W. Sippy was negative. Examination of the abdomen showed a swelling in the right upper quadrant. Palpating from the right lumbar region and pressing forward, motion was transmitted directly through a mass. Slight pressure exerted in the lumbar region was transmitted to this mass.

X-rays: Colon apparently anterior to the palpable tumor, it being possible to displace the barium mixture by pressing over the colon. On account of the weight of the patient and the gas in the bowels, the kidney outline was not well shown.

Cystoscopy and catheterization of the ureters, negative. Urine: No pus and sterile on culture. A right pyelogram showed the kidney pelvis at the level of the second and third lumbar. The minor calyces were not well defined. The outline of soft parts tumor could be seen.

Diagnosis: In view of the fact that the pyelogram was normal in all details the kidney was excluded as being involved and a diagnosis of carcinoma of the liver was made.

Confusion might occasionally arise in instances in which the patient has a frank urinary tract disease and which symptom-complex is overwhelmingly urinary in character. The patient, however, might have a lesion of the liver running a more or less silent course, and unless a careful, critical study is made, the lesion of the liver might be the more serious and the more important of the two lesions. Under certain circumstances the differentiation might not be quite so simple. Perhaps some confusion might arise where the lesion of the liver is not so well defined as to make it obviously a matter of liver path-

ology and in which the liver changes occur while the patient is under observation. If this enlargement of the liver takes place while the patient is under observation and if a self-evident urinary lesion is present, it would be easy enough to in-

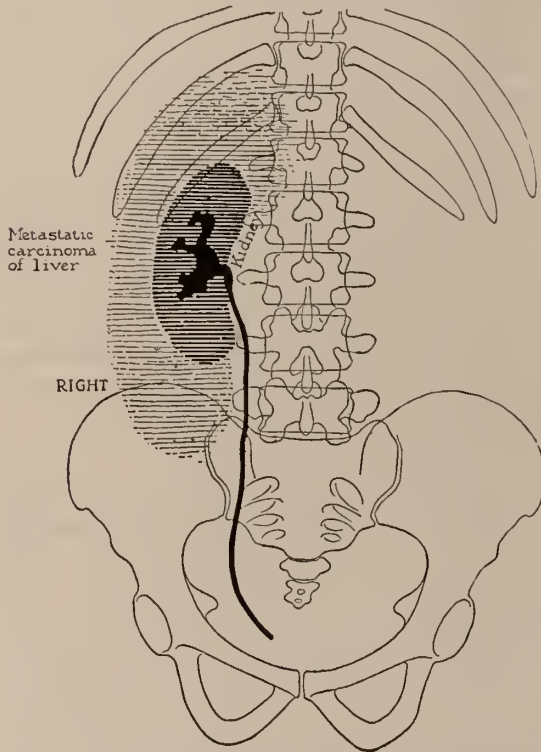


Fig. 8. Large mass in right side of abdomen. Pyelogram made to rule out tumor of right kidney. Pyelogram normal.

terpret the swelling in the right upper quadrant as kidney instead of liver. That this may occur is evidenced in the following case, in which the patient was sent in with a tentative diagnosis of tuberculosis of the kidney and bladder, and while under hospital observation a tumor developed in the right upper quadrant, making it relatively simple to diagnose a renal tuberculosis. But this diagnosis proved to be incorrect for the patient had a bilateral renal infection, strictures of the ureter, and ulcer of the bladder, associated with leukoplakia. The tumor mass in the right upper quadrant was due to metastatic carcinoma of the liver secondary to carcinoma of the gall bladder.

Case No. 15. Mrs. T. M., aged forty-four, referred by Dr. E. Spiegelberg.

Previous History: Negative.

Present Complaint: Pain in right side, frequency and pain on urination, and nocturia.

About two weeks before coming under observa-

tion patient was suddenly seized with an attack of severe, sharp pain on the right side, which started under the right costal margin and radiated out, the attack lasting about eight hours. Two days later another attack occurred and this time the pain radiated from under the right costal margin to the back. Since the second attack a dull aching pain under the right costal margin has been present. Nocturia for twenty years; at first once during the night, but at present three to four times each night. Frequency of urination was first noticed about three years ago and gradually increased until it was necessary to urinate every two hours. The aching pain in the bladder was always relieved by urination.

Physical Examination: Head and neck negative. Heart and lungs negative. Abdomen: A palpable, tender mass in the upper right quadrant. Spleen not palpable.

Cystoscopic Examination: Bladder sensitive. Flakes of pus adhering to bladder mucous membrane. Ureters normal. Some nodules on posterior wall behind the right ureter.

Catheterized Urines: Pus in the bladder, also in right and left kidney urines. A Gram negative rod upon culture in the bladder and right kidney. T. B. negative. Guinea pigs, negative.

X-ray: A small, round density on the right side in the region of the right kidney pelvis; numerous phleboliths in the pelvis, one of which was quite large, raising the question of a possible ureteral stone.

Pyelograms: A small amount of solution in the right kidney ending in a dime-sized round pocket at the level of the third lumbar. Below this the solution followed an irregular, jagged course. Just below this pocket a small rounded area of decreased density surrounded by the filling solution. This shadow is due to a kidney stone which blocks the filling of the kidney.

The patient returned to the hospital after three weeks at which time she also complained of a feeling of fullness after eating, vomiting, jaundice for twenty-four hours, and pain in epigastrium.

Examination: The sclera and skin were definitely jaundiced. The abdomen was not distended. The epigastrium was almost entirely filled with a palpable mass, which extended down to 2 cm. of the navel. The mass which seemed to be enlarged liver had become exquisitely tender.

Diagnosis: Carcinoma of the stomach with metastasis to the liver. Exploratory operation was advised.

Operation: Revealed a carcinoma of the gall bladder with nodules in the liver and obstruction to the bile ducts.

Case No. 16. Miss T. C., aged forty-eight. Previous History: Seven years ago patient had attacks of severe pain in the bladder, associated with retention of urine and hematuria. Condition cleared up with local treatment.

Present Complaint: For the past four years



patient has had periods of bladder distress, pain, burning, retention of urine during daytime, and nocturia, associated with constipation and jaundice. No pain or vomiting accompanied the jaundice, which has been present for about one year.

**Physical Examination:** Lungs, negative. Heart, left border just outside nipple line, otherwise negative. Abdomen, very much distended and tense. No palpation possible. There is a shifting dullness.

**Cystoscopic Examination:** Bladder capacity exceedingly limited. An indentation of the posterior wall of the bladder.

**Pyelograms:** Right, a good filling of the pelvis and inferior and middle calyces. Tip of superior calyx visualized, but the solution stops abruptly at the junction of the superior calyx with the pelvis, producing a filling defect.

Catheterized urines were free of pus and sterile upon culture. Blood Count: 4,300,000 red cells, 16,800 leucocytes and 85 per cent. hemoglobin.

**Rectovaginal Examination:** A uniform distention of the pelvic diaphragm due to over-distention of abdomen.

**Exploratory Operation:** The liver was extremely nodular and one-half the normal size. Right ovary was cystic and about the size of an orange. This was removed.

**Diagnosis:** Right ovarian cyst and cirrhosis of liver.

#### MALIGNANT DISEASE OF THE LARGE INTESTINE

Malignant disease of the large intestine has a symptomatology quite distinctive, as a rule, so that a carefully elicited history is a clue that helps to differentiate between this lesion and malignant disease of the bladder. In spite of this fact, the error is occasionally made of operating upon the bladder instead of operating upon the rectum or sigmoid. Not only can and does this occur after a careful history has been taken, but this error may also be made after careful cystoscopy. The fact that the bladder is often involved and sometimes involved early in cases of primary carcinoma of the rectum and sigmoid is one reason why the men, who are doing much of this type of gastro-intestinal surgery, request almost routinely a careful cystoscopic study of the bladder before the carcinoma is operated upon.

Naturally one would hesitate to advise patients to have an extensive operation for carcinoma of the rectum should there be bladder involvement. The determination of which organ is the primary seat of malignant disease also is confusing in instances in which the tumor in the bladder is

as large or slightly larger than the tumor in the rectum.

**Case No. 17.** S. K., aged sixty-two, complained of difficulty in urination, pain in the left side of the back, constipation, pain in the rectum and epigastrium. For six months before admission had had more or less difficulty on urination associated with pain. Stated it was difficult to start the stream and the stream was small. For six months suffered from constipation

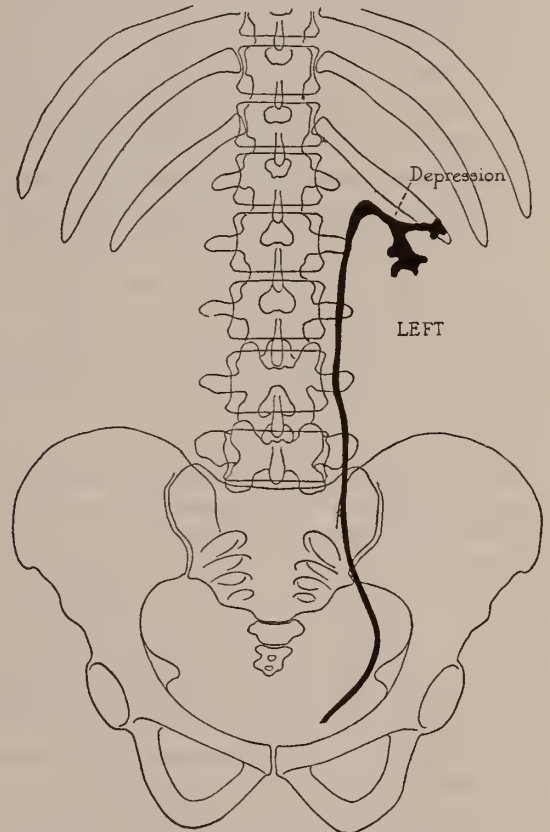


Fig. 9. Note depression in left renal pelvis due to carcinoma of the large bowel.

and was obliged to use laxatives frequently. Some indefinite abdominal discomfort more marked in the region of the right kidney. Six months previously began to have pain in the rectum, aggravated by bowel movement.

**Physical Examination:** Head and neck, heart and lungs, negative. Marked tenderness in the epigastrium and a hard mass could be palpated in the left lower quadrant.

**Rectal Examination:** A normal prostate. Above the prostate, a hard mass extending backwards to the sacrum, which at first gave one the impression that the base of the bladder was infiltrated.

**Provisional Diagnosis:** Carcinoma of the bladder involving the rectum.

**Cystoscopy:** A tumor situated on the base of the bladder, extending from about the middle of

the trigone backwards to the posterior wall and elevating the bladder neck. The bladder mucous membrane over the tumor normal. X-rays, negative for stone.

A review of the history coupled with the finding led us to believe that the tumor was primarily in the rectum with a secondary involvement of the bladder.

Another type of malignant disease of the bowel which is apt to cause confusion is that in which the patient has an organic disease of the genito-urinary tract, the symptoms of which overshadow the bowel lesion although the latter is the more serious and demands surgical intervention more urgently than does the lesion in the bladder. This is illustrated by the following case in which the patient was treated for cystitis and enlargement of the prostate for several months before coming under observation.

Case No. 18. Mr. E. B. C., aged sixty-four, referred by Dr. Sarah Brayton, gave the following history:

Previous Illness: Irrelevant.

Present Illness: Three years ago patient first began to notice that he was obliged to urinate more frequently than had been his habit. At the present time he is obliged to arise two or three times at night and to void every two to three hours during the day. Associated with this frequency there is an urgency, so that he must respond at once or a few drops of urine escape. Painful urination has been present for several years. The pain is located in the urethra and is present only during urination. Pus was found in his urine nine months ago. He has been treated by prostatic massage, bladder irrigations and electricity to the prostate through the rectum. Has had arthritis in his right knee for two or three years for which he has received high frequency treatments.

Physical Examination: Heart and lungs, negative. The liver, kidney and spleen, not palpable. A distinct point of tenderness three fingerbreadths above the left anterior superior spine of the ilium. Palpation reveals the presence of a tender mass in the left lower quadrant. Rectal examination shows slight enlargement of the prostate and stripping shows pus.

Urinalysis: A trace of albumin, a trace of blood, no sugar, some pus and amorphous deposits. Cultures of the urine, sterile.

X-ray: Stone in the pelvis of the left kidney.

Further investigation of the area of tenderness in the left lower quadrant, which increased in intensity while the patient was under observation, led to a diagnosis of carcinoma of the descending colon. An intestinal obstruction subsequently developed for which a colostomy was done. Patient was dis-

charged from the hospital with the colostomy opening.

It is perfectly evident in the light of subsequent events that this patient's intestinal lesion was of much more importance than his genito-urinary disease, but the former lesion had been apparently overlooked before coming under observation.

#### TUMORS OF THE MESENTERY

Lesions of the mesentery are rare, but, even so, their rarity does not exclude them from presenting certain signs and symptoms which call for differentiation from some lesions of the genito-urinary tract. That this type of lesion does occur is illustrated by the following case seen with the late Dr. B. W. Sippy:

Case No. 19. The patient entered Presbyterian Hospital January 3, 1918, complaining of a tumor mass in the abdomen and an infection of the right kidney. Stated that about December 4th had intermittent attacks of pain of moderate severity radiating from the right kidney to the pubes. A physician who was called examined the urine and told him that it contained stones. Immediately following this attack he had a feeling of distention and pressure over the entire abdomen. Another physician was called and diagnosed a tumor mass in the abdomen. Following the attack he had two or three mushy bowel movements every day. The distention disappeared and it was his impression that the circumference of the abdomen was less than formerly. Just before coming under Dr. Sippy's observation he was cystoscoped and told that his right kidney contained pus and colon bacilli.

Physical examination of the abdomen by Dr. Sippy showed a smooth uniform mass filling the greater part of the abdomen and more prominent on the right than on the left side. The mass extended from the limit of the right abdominal wall to the mammary line on the left above and terminated just below the ensiform. Below, it extended half-way between the umbilicus and the pubes. There was a slight lateral and a definite respiratory mobility. On palpating the surface of the mass it seemed to disappear under the right costal arch. On deep lumbar palpation it was possible to elevate the mass but there was no impression that it developed from the lumbar region. Fluoroscopy of the colon, negative. Rectal examination, negative. Examination of the central nervous system, negative.

Cystoscopic Examination: A few submucous hemorrhages near the right ureteral orifice. Ureteral Catheterization: Clear urine from both sides. The Wassermann test, negative. Examination of a fresh specimen of urine: Specific gravity 1010, acid reaction, no albumin or sugar, 2 granular casts and a few leucocytes. Culture was sterile.



Blood Count: 4,440,000 red cells, 7000 leucocytes and 78 percent hemoglobin.

The urologic interest in this case was two-fold, first, the patient was told that his urine showed the presence of infection and that pus and stones were recovered from the specimen; second, while it did not seem likely that the tumor was renal in origin it seemed advisable to make a pyelogram in order to exclude definitely this point if this were possible. The pyelogram showed a perfectly normal kidney pelvis and the kidney was therefore excluded as the seat of origin for the tumor.

A tentative diagnosis of sarcoma of the omentum was made. Operation was performed by Dr. A. D. Bevan who found a fibroma of the mesentery.

#### ACUTE DIVERTICULITIS

With the passing of time many lesions that yesterday were regarded as rarities are common occurrences today. To this group belong cases of diverticulitis of the large bowel. Although these cases are being recognized with greater frequency, those having a genito-urinary aspect or complication are not so common. As a rule, in practically all cases of this type there is a history of a primary intestinal or gastro-intestinal upset. Thus, in a certain number of these cases in which perforation of the diverticulum into the bladder results, it is often interpreted as a secondary group of symptoms instead of a primary. Here, again, a careful history plays an important part in unraveling the problem. Cases of diverticulitis with perforation into the bladder and resulting severe cystitis have been confused with malignant disease of the bladder and bowel. The problem may be somewhat difficult to solve even when cystoscopy is carried out. Careful interpretation of the symptoms together with careful and complete examination of the abdomen and gastro-intestinal tract has aided us in making a diagnosis of diverticulitis on several occasions. As an illustration the following case may be mentioned:

Case No. 20. The patient, a male, aged forty-five, referred by Doctors Merki and Apfelbach, complained of a crackling on urination which had been present for six weeks, pain in the bladder and bladder spasm which had been present for five weeks. Previous to coming under observation he had been cystoscoped three times. The first two reports were that he had

a carcinoma of the bladder and the third that no carcinoma was present.

His trouble began, six weeks before consulting us, with constipation, for which he took a cathartic and enema. Four or five days he had cramps in the bowel and tenesmus associated with mushy stools. He attributed this difficulty to the eating of cantaloupe. A proctoscopic examination was made at this time and a diagnosis of mucous colitis made. A few days later the patient noticed crackling and gas on urination and that the urine contained the bismuth he was taking by mouth. Examination of the urine showed vegetable matter under the microscope.

General physical examination, negative.

Examination of the urine: A trace of albumin, no sugar or blood, some pus and an occasional granular cast. Culture of the urine showed colon bacillus.

X-ray: Negative for stone.

Wassermann test, negative.

Rectal examination, negative.

Cystoscopic Examination: A small polypoid mass hanging from the neck of the bladder, a definite median bar, and an area of edema in the posterior wall which was covered with adherent, muco-pus. No fistulous opening could be seen though it was believed it was located in this area of edema.

Following the cystoscopic examination the patient had an acute exacerbation of the diverticulitis which was treated with hot applications. The patient was advised to go South to recuperate and to return later for operation.

Undoubtedly the sequence of events in this patient's case was about as follows: The eating of the raw cantaloupe had nothing to do with his illness. The attack that was diagnosed as mucous colitis was really a diverticulitis which perforated into the bladder and was evidenced by the crackling noise on urination several days later.

Not all cases of diverticulitis result in perforation into the bladder. Diverticulitis and the resulting peridiverticulitis cause adhesions between the intestines and the bladder, as a result of which the patient develops certain urinary symptoms. Cases of this kind have been noted but are omitted from this discussion.

#### LESIONS OF THE PANCREAS

Here, as in other problems, the differential diagnosis may be classified under two groups, those in which there is a lesion of the urinary tract as well as a lesion of the pancreas, and those in which a pancreatic lesion must be excluded from a lesion of the kidney. In the ordinary case in which the patient presents a pancreatic lesion, it may be very easily confused with

a lesion of the right or left kidney, often with a malignant tumor of the kidney, and in certain cysts of the pancreas confusion may arise between it and a hydronephrosis. Indeed, the two condi-

out the production of symptoms and before they are noticed by the patient.

In the solution of the differential diagnosis the one single aid in this particular group of cases is a pyelogram. In lesions of the pancreas the pyelogram is normal and in this way one is able to exclude the kidney. Occasionally there may be a small amount of dislocation of the kidney pelvis or of the kidney with its pelvis or the ureter may be turned out of its regular course by the enormous size of the pancreatic cyst, but for all practical purposes the outstanding bit of evidence is that the pyelogram is normal. A case of this type is the following:

Case No. 21. Mr. J. H. M., aged fifty-five, referred by Dr. B. W. Sippy. Patient complained of distress in the abdomen, the presence of a tumor mass in the abdomen and frequency of urination. The onset of the trouble was an acute pain in the abdomen which was relieved by taking bismuth and chalk. The

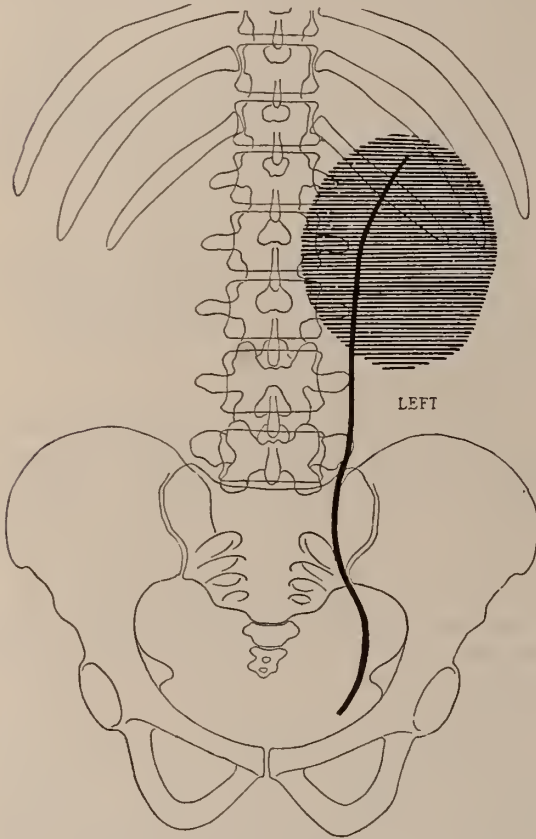


Fig. 10. Large left hydronephrosis is the cause of indefinite abdominal pain.

tions may be present in the same case, as for example when the cyst exerts pressure on the ureter, producing a hydronephrosis, in which event the picture may be that of a hydronephrosis. Cases in which the cyst compresses the pylorus or the duodenum with resulting symptoms of gastrectasis and vomiting, cases in which the common bile duct is compressed so that the patient has jaundice, and cases in which ascites is present as a result of compression of the portal vein, form a group that obviously does not call for a differentiation from lesions of the kidney. The chief difficulty in this group arises from the fact that the presence of a palpable tumor is the one and only point up for consideration in the differential diagnosis. As is well known, renal tumors often attain large size with-

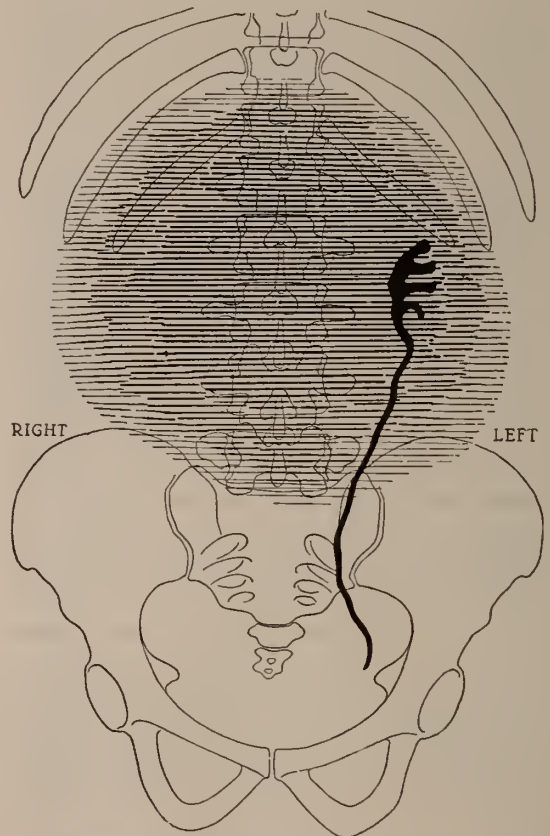


Fig. 11. Showing the outline of a very large pancreatic cyst. Pyelogram normal.

pain continued to come on two hours after eating and was relieved by eating. The last attack was so severe that he was obliged to take morphin. Two weeks after the last attack he noticed a tumor



mass in the abdomen. This did not produce symptoms and did not increase in size. He recalled that before noticing the tumor he had wondered why he was larger on the right side than on the left.

He complained of frequency of urination during the day. Urination was accompanied by smarting, but there was no real pain. No nocturia.

Examination of the patient by Dr. R. C. Brown showed a large, firm tumor mass filling the space from the ensiform to the umbilicus and causing a marked forward bulging in the abdomen. The mass was smooth and round. The liver and spleen were not palpable.

Fluoroscopy: The mass disappeared under the costal margin on the left side. The transverse colon lay below the mass. Rectal examination negative.

Examination of the Blood: 8500 leucocytes, hemoglobin 80 per cent, and blood pressure 145/85.

Cystoscopy: A well-defined median bar with a notch formation above. The trigone was hyperemic.

X-ray: A dense shadow of the soft parts filling the entire upper abdomen. The left pyelogram showed the pelvis at the level of the second and third lumbar. The calyces were long but not dilated. Some dilation of the entire ureter and slight angulation opposite to the third lumbar. The kidney pelvis was normal and the kidney outline could not be seen. The outline of the pyelogram while sharp and well-defined could be visualized with difficulty owing to the shadow of the tumor.

In view of the fact that the patient had a normal pyelogram and because of the extent of the tumor shadow, the kidney was excluded as being the origin of the tumor mass. A diagnosis of cyst of the pancreas was made. Operation was performed by Dr. A. D. Bevan, who found a cyst of the pancreas which was drained.

#### CARCINOMA OF THE PANCREAS

It is generally stated that an early sign of carcinoma of the pancreas is jaundice. If the carcinoma involves the head of the pancreas with resulting constriction or closure of the common bile duct, severe and permanent jaundice is the result. But this type of jaundice may not be present until late in the course of the disease, and when present rarely does the question of differential diagnosis arise between it and lesions of the kidney. On the other hand, a patient may present a frank, out and out lesion of the genito-urinary tract with symptomatology so grossly evident that one is inclined after a somewhat cursory examination to make a diagnosis of disease of the genito-urinary tract and to institute proper urologic treatment. That one can occasionally be in error because of the presence of a more serious lesion than the one in the urinary

tract is evidenced by one of our cases in which the patient had a carcinoma of the pancreas associated with a leukoplakia of the bladder and ureter.

Both lesions may be present and because of the prominence of one the other may be overlooked as happened in the following cases:<sup>1</sup>

Case No. 22. A. K., male, aged fifty-four, complained of pain in the left kidney region, passage of sand and gravel in the urine, pain on urination, frequency, hematuria, and pus in the urine. He denied having had gonorrhea or syphilis. He stated that his trouble began fifteen years before, after a severe cold, with burning on urination and frequency, so that he was obliged to void every few minutes. From that time he had more or less urinary disturbance, though he would be free from trouble for six months at a time.

The pain in the region of the left kidney had been present for several years. The pain was often so severe as to require a hypodermic injection of morphin. The frequency continued, the patient voiding every hour and sometimes every half-hour during the day and two or three times during the night.

Physical Examination: Pupils equal in size, reacting to light and accommodation. Some rigidity in the left rectus muscle and some rigidity and tenderness in the region of the left kidney along the course of the ureter. Liver palpable three finger-breadths below the costal arch. Extremities negative.

Rectal Examination: Prostate negative, seminal vesicles palpable. Above the prostate and seminal vesicles and above the peritoneal fold was felt a hard, irregular, nodular infiltration which was more or less crescentic in outline.

During patient's stay in the hospital he suddenly developed edema of the left leg. Examination by Dr. J. B. Herrick disclosed a hard nodule in the left inguinal region, the liver palpable three finger-breadths below the costal arch, a hard nodule in the umbilicus and an enlarged left axillary gland as well as the tumor mass previously found on rectal examination.

Cystoscopic Examination: A leukoplakia of the bladder.

From the clinical findings it was the impression that besides having the urinary tract disease he also had a carcinoma, probably in the stomach. Examination of the stomach contents, however, was negative and fluoroscopic examination likewise. Fluoroscopy of the colon showed some spasms, probably not carcinoma. In spite of the findings Dr. Herrick still believed that the patient had, in addition to the urinary disease, a carcinoma somewhere in the abdomen and that the mass which could be felt in the rectum was a retrograde implantation.

Diagnosis: Exploratory operation showed the

1. Kretschmer, H. L.: Leukoplakia of the Bladder and Ureter, *Surg., Gynec. & Obst.*, 325-339 (Oct.), 1920.

presence of grayish white, hard nodules in the liver and a primary carcinoma of the head of the pancreas.

Case No. 23. Mrs. R. H., aged twenty-three, seen in consultation with Dr. I. Rabens, at North Chicago Hospital.

Patient complained of dizziness, fleeting pains about head and ears, severe constipation and nervousness. She could assign no definite time nor cause as to the onset of symptoms. Gained 50 pounds in weight in the two years after her marriage.

Physical Examination: Head and neck negative. Heart and lungs negative. Abdominal examination revealed a large, movable mass in the right hypochondrium; edges rather rounded; not tender. There is a notch just below the costal arch which seems to separate it from the mass. Spleen not palpable.

Cystoscopic Examination: Bladder urine not clear. Bladder normal except slight edema of trigone. Catheter does not pass as high on the right side as it does on the left.

X-rays: Stomach and spleen flexure pushed to the left.

Pyelogram, right: A renal pelvis of normal configuration, so far as calyces are concerned. The pelvis, however, forms an obtuse angle with the ureter. The latter is distinctly dilated almost to the point of the crossing of iliac vessels. There is a distinct inward displacement of the lumbar portion of the ureter. The kidney shadow shows a distinct bulging towards the inner side at the upper pole.

Diagnosis: Extrarenal tumor, probably a cyst in the pancreas.

This diagnosis was verified at the operation.

#### RETROPERITONEAL SARCOMA AND TUMORS OF THE MESENTERY

In some respects one might consider both retroperitoneal sarcoma and tumor of the mesentery together, since both are rare conditions and both have a rather rare symptomatology. The symptoms are often very variable; for example, at times cases present practically no symptoms; on the other hand, cases are not uncommon that have the gravest symptoms. The size of the tumor apparently does not always play a considerable role in the production of symptoms, since a very large tumor may be discovered by accident during the course of the physical examination. That large tumors, not only retroperitoneal tumors but those of the mesentery as well, produce manifestations due to displacement of the viscera is readily understood. The term "Verdrängungserscheinungen" is a very apt term and used by Schmidt in his interesting article on this subject. The manifestations do not apply only to this type of tumor; as a matter of fact,

they are commonly met with in all abdominal tumors. It is a well-known fact that retroperitoneal tumors belong to the group of tumors that may reach the largest size of any tumor in the body.

A feeling of fullness, tenseness, heaviness or pressure in the abdomen, and an increase in the size of the abdomen, associated with upward displacement of the diaphragm, resulting in palpitation and dyspnea, ascites, edema of the extremities, etc., are not uncommon. Some of these symptoms may be present in tumors of the kidney as well.

The form and consistency of these tumors are not of much help in arriving at conclusions. As a rule, the gastro-intestinal symptoms are the most marked, and it is generally agreed that the next most frequent group of symptoms are the genito-urinary symptoms. These may be due to pressure of the tumor on the kidney or ureter, as a result of which the patient has symptoms of hydronephrosis, frequency of urination, pyelitis, oliguria, etc.

The problem in this group of cases, of course, concerns itself with determining the organ to which the tumor belongs. Where a question of differentiation from the urinary organs is under discussion, the simple and expedient method at the urologist's command of resorting to a pyelogram will be enlightening. It would be exceedingly unusual for a tumor of the kidney that is as large as a retroperitoneal sarcoma to show a normal pyelogram. In other words, large renal tumors would show a deformity recognized as tumor deformity in the pyelogram. Some confusion may arise in instances, in which the tumor involves the kidney pelvis by pressure from without, or, as in one of our cases, in which the tumor was so large as to cause a displacement of the kidney from one side of the body to the other. This was associated with hydronephrosis and hydro-ureter, due no doubt to contraction of the ureter at the pelvic brim by the enlargement of the retroperitoneal tumor.

Diagnosis: In the case under discussion the diagnosis of retroperitoneal tumor was made, in all probability a malignant one. The only point for differential diagnosis considered was that of a large solitary cyst.

Case No. 24. Mrs. A. V., aged seventy-one, referred by Dr. Wilber E. Post.



Previous history, negative.

Present Complaint: Mass in the abdomen and loss of weight. The patient had been feeling well, going about her normal duties, until December, 1924. At that time she had a prolapse of the uterus. Cervical repair, July, 1925. Two months before coming under observation noticed that the abdomen was very large, and was under the impression that she was getting fat. One month ago noticed a ridge across the abdomen, and could feel the presence of a mass, since which time it has rapidly increased in size. Lost thirty pounds in three months.

Physical Examination: Head and neck, negative. Heart and lungs, negative. Examination of the abdomen: Asymmetrical, right side much larger than the left. On the right side, a mass was felt, which was firm, smooth and fixed, extending over two-thirds of the abdomen, not tender. Extremities negative.

Blood Count: Reds, 4,300,000; whites 7,200; hemoglobin 87 per cent.

Blood Pressure: Systolic 180; diastolic 88.

A genito-urinary examination was made to determine whether or not the mass was urinary in origin. Cystoscopic examination, negative. Ureters catheterized, free from pus and sterile upon culture.

Pyelograms: Right half of the film hazy and indefinite due to a large tumor. Right pyelogram shows pelvis and ureter filled. Dilatation of the ureter extending from brim of bony pelvis to the kidney pelvis. Kidney pelvis hydronephrotic and egg shaped.

X-ray of the colon, negative.

Operation revealed a retroperitoneal tumor. A piece was removed for histological study which showed a spindle-celled sarcoma.

#### LESIONS OF THE CENTRAL NERVOUS SYSTEM

The lesion of the central nervous system which is most commonly met with as far as the genito-urinary surgeon and the general surgeon are concerned is tabes dorsalis. It is one of the most frequent causes of operation that fails to relieve the patient of his symptoms. This is really an old story, but one still sees patients who have had not only one but two and even three operations when they were really suffering from tabetic crises. But besides tabes dorsalis there are other lesions of the central nervous system that may and do call for urologic examination. One of these is multiple sclerosis. In a consideration of the various lesions of the central nervous system one must not forget that the symptoms may be either urinary or sexual, or both. The following case is an illustration of this type.

Case No. 25. Mr. C. G., aged forty-two, complained of incontinence and frequency of urination and sexual

weakness. The incontinence had been present for two or three months. Three weeks before admission patient flooded the bed so that it was necessary to change the bedding. Occasionally while walking he would lose some urine. This occurred twice in the week previous to admission. The frequency was variable; at times he was obliged to void every hour or two and again only once in five or six hours during the day and three or four times a night. With the desire to void it was imperative that he respond at once, otherwise he would wet his clothing. Noticed a gradual decline in his erections, although his desire was about normal.

Examination of his genito-urinary tract: External genitalia, negative. Rectal examination, negative. Strippings from the prostate, normal. Urinalysis, negative—no albumin, blood or sugar. Wasserman test, negative.

Cystoscopic Examination: A mild generalized trabeculation. The ureteral orifices, normal. Urethroscopic examination, negative.

Although this patient had urinary and sexual symptoms the local examination was negative, and it was deemed advisable to have a neurological examination made. This was done by Dr. Peter Bassoe who made a diagnosis of multiple sclerosis.

The sphincter disturbance complained of by this patient is not uncommon in multiple sclerosis. Cases of this type are not infrequently subjected to all sorts of local treatment and occasionally to surgical operation which, of course, does not give the patient the desired relief.

#### AMYOTROPHIC LATERAL SCLEROSIS AND PAPILLOMA OF THE BLADDER

In consideration of the differential diagnosis between organic disease in the genito-urinary tract and lesions of the central nervous system it must not be forgotten that, although the nervous symptoms dominate the clinical picture, the patient may at the same time be suffering from a serious lesion in the genito-urinary tract; in other words, because a patient has an obvious disease of the central nervous system, either functional or organic, he should not in a doubtful situation be deprived of a complete genito-urinary survey in order not to overlook some organic disease. As an illustration we are giving the following case, in which both amyotrophic lateral sclerosis and a papilloma of the urinary bladder were present.

Case No. 26. A. B., male, aged seventy. Referred by Dr. D. B. Phemister.

Three years before coming under observation the prostate had been removed. On admission patient complained of passing bloody urine, pain in the

head, side and back. Two years after the prostatectomy he first passed bloody urine, and associated with this there was pain at the beginning and end of urination. Stated that the bloody urine was more marked when he was constipated and was always present after lifting or carrying. There was also some interruption of the urinary flow; this would improve after the passage of large clots. For four months numbness of the left arm, occasionally quite severe, and also in the left lower extremity which was worse during the day than at night. Hot flashes for some months, usually at night. He would feel warm over the entire body and in a few moments there would be a tingling sensation over the entire body, associated with a burning sensation. Six weeks before admission, it was necessary to wait for a few minutes for the stream to start.

General Physical Examination: Negative except for cataracts in both eyes. Pupillary reflexes, weak. Rectal Examination, negative.

Blood Examination: 5,000,000 red cells, 6200 white cells, 80 per cent. hemoglobin. Blood pressure, 150/70.

Examination by Dr. Phemister showed atrophy of the thenar eminence, weakness of the flexor muscles of the hand and atrophy of the interossei muscles with some involvement of the ulnar and median nerves.

Cystoscopic Examination: Presence of a papilloma behind the right ureteral orifice about the size of an almond. This was treated by fulguration.

The importance of early recognition of a small tumor at the age of seventy with resultant complete disappearance by fulguration is certainly perfectly obvious.

#### DISEASES OF THE BLOOD AND BLOOD-MAKING ORGANS

As a general rule cases belonging to this group offer little or no difficulty in diagnosis and as a rule no differentiation is called for from lesions of the genito-urinary tract. However, there are certain circumstances in which a differentiation is called for, and this has occurred in a case presenting one of the three groups of symptoms, first, sexual symptoms, second, presence of upper left quadrant tumor, and third, presence of bladder symptoms.

The one sexual symptom seen with disease of the blood-making organs is priapism and this occurs as is well-known in cases of leukemia. In the absence of a history of trauma to account for the presence of a priapism, one should always be on the lookout for the presence of leukemia. Not every case of priapism is due to leukemia, but if its possibility as a causative factor is re-

membered, it will often prevent arriving at wrong conclusions. As a matter of fact, as far as the patient himself is concerned, this is often the first and only symptom of which he may complain. Indeed failure to recognize this clinical fact may lead to serious embarrassment, for example, because of the purely local nature of this single symptom, what would be more natural than the institution of purely local treatment, naturally without relief of symptoms and later on perhaps to the chagrin of the physician?

Group 1. Case No. 27. Mr. A. B., aged forty-six. Six weeks before coming under observation had a priapism which lasted two hours, and several days later had a second attack which lasted four hours. A third attack followed several weeks later and lasted about ten hours. A fourth attack lasted a few hours. The fifth attack was present for seventeen days without interruption.

Physical Examination: Heart and lungs, negative. Enormous enlargement of the spleen. The genito-urinary tract, negative except for the priapism. Urinalysis, negative. Blood Count: Reds 3,150,000, whites 469,200, hemoglobin 60 per cent. Wassermann test, positive.

Diagnosis: Splenomyelogenous leukemia and syphilis.

Group 2. In this group, namely, those presenting themselves with a tumor in the left upper quadrant, differentiation from lesions of the left kidney is important. This should be done as soon as possible, before there are changes in the blood picture. As evidence of the difficulty in making a diagnosis the following cases will be mentioned:

Group 2. Case No. 28. Mrs. I. B., aged twenty-eight.

Present Complaint: Tired feeling, albuminuria of pregnancy, backache, and the presence of a mass in the left upper part of abdomen. Had had some evening rise of temperature which was interpreted as being due to some enlargement of the tracheo-bronchial lymph glands. The mass in the left kidney region was not painful and was present for two weeks before admission. Albuminuria occurred during her pregnancy. Recent urinalysis showed a few blood cells, casts, a trace of albumin and some sugar. The patient was extremely nervous.

Physical Examination: Negative except for a large tumor mass in the region of the left kidney, which moved with respiration. The mass was firm and smooth and not tender. Palpation of the axillary, inguinal and cervical glands, negative.

Blood Count: Reds 4,790,000, whites 7200; hemoglobin 80 per cent. Blood Pressure: 120 systolic, diastolic 72. Wassermann test, negative.



Blood Chemistry: Urea 23, uric acid 2.3, creatinin 1.3, non-protein nitrogen 29.

Cystoscopy: Bladder normal; urine from right and left kidneys, sterile and free of pus. Phthalein test showed time of appearance three minutes on right and left sides, output of 72 from right and 17 from the left.

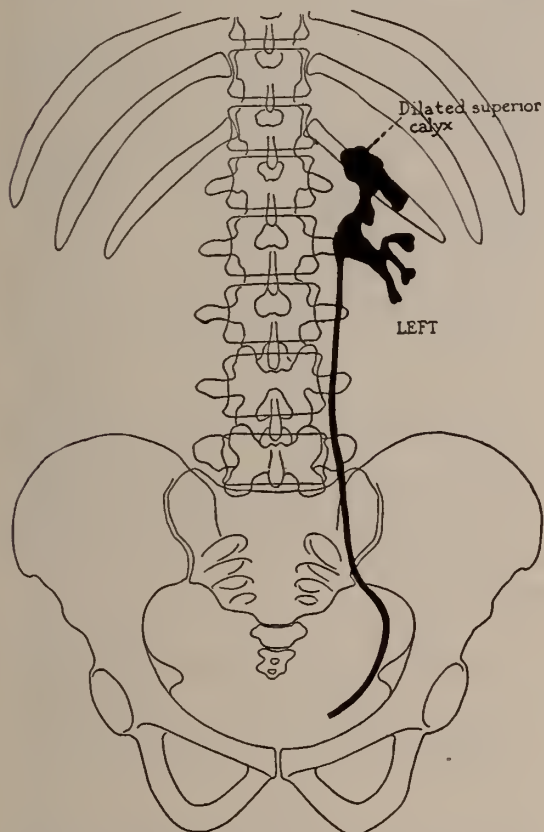


Fig. 12. Dilated superior calyx. A large mass palpable in left upper quadrant. Question, tumor of kidney? Pyelogram normal except for dilated superior calyx. Diagnosis, Extra Renal Tumor, probably spleen. Operation showed enlarged spleen.

Pyelogram, left side: A normal condition except for some clubbing of the superior calyx. From the pyelogram a diagnosis of enlarged spleen was made.

One and a half years later the patient had a splenectomy performed.

Diagnosis: Primary Splenic Anemia.

Group 2. Case No. 29. M. A., male, aged fifty-six, referred by Dr. E. E. Irons.

Previous History: A prostatectomy was performed two years before coming under observation. Had had gastro-intestinal trouble.

Present Complaint: Mass in the upper left quadrant, pain in the region of the spleen, nausea, bad taste and dryness of mouth and sleeplessness.

Symptoms began suddenly about three weeks before patient came under observation, and gradually became more severe. Pain in the upper left

quadrant was severe and more or less constant in nature. It was located under the costal margin and made worse on pressure. Did not involve course of ureter. Nausea was sometimes present but no vomiting.

Physical Examination: In front of right ear, a gland about the size of a hazelnut, firm, movable, and not tender, which had been present for two years. Several weeks ago it has increased to the size of a walnut. X-ray treatment reduced it to its present size. Tonsils, large. Multiple, hard, movable glands in the neck. Heart and lungs negative. In the abdomen a mass which protruded from under the left costal margin, movable with respiration and tender upon pressure. Lower margins of the liver, palpable. Lymph-glands in both inguinal regions and axillae.

Blood Count: Reds 4,280,000; whites 10,900; hemoglobin 88 per cent. Blood Pressure: Systolic 124; diastolic 80.

X-rays: Enormous soft parts shadow on the left

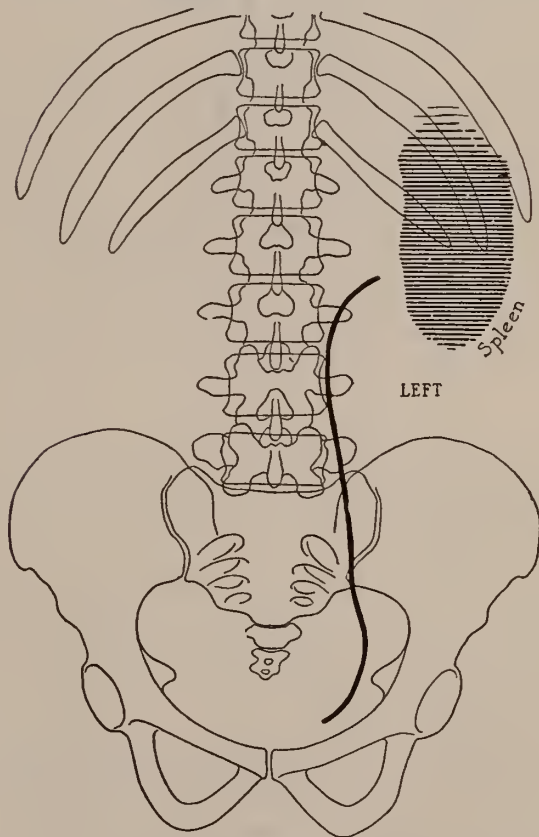


Fig. 13. Enlarged shadow in left upper quadrant. Question, is it spleen or kidney?

side, probably spleen. Kidney outline lies between the inner margin of this shadow and the spine. Right kidney not definitely made out.

Pyelogram, left: Kidney pelvis elongated and at the level of the third lumbar. Inferior calyx rather

broad; superior calices not well filled and have the appearance of being pushed downward, suggesting compression from the large soft parts shadow.

Section of gland from left side of neck: Small areas of normal lymphoid tissue, and large areas of round larger cells resembling those in lymphosarcoma. Many mitotic figures are seen

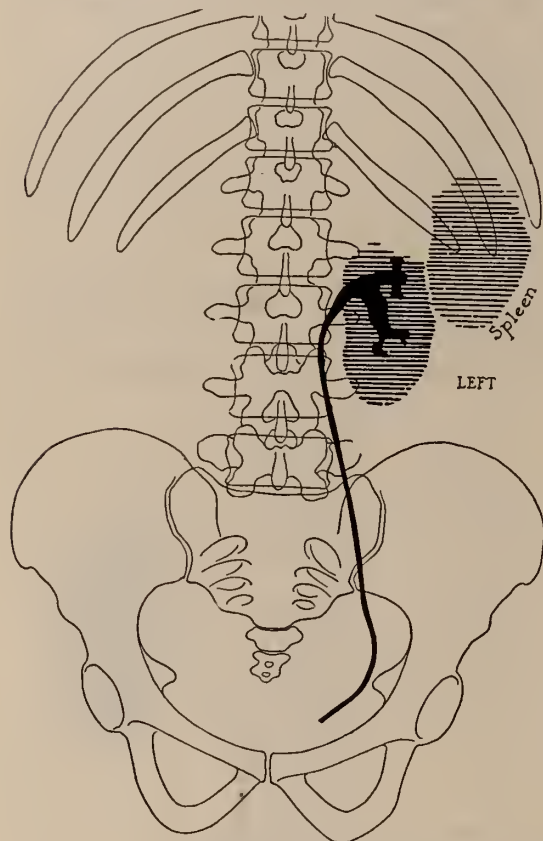


Fig. 14. Pyelogram shows a normal pelvis. Displacement downward of the kidney by the enlarged spleen.

and these cells are distinctly malignant in appearance.

Diagnosis: Chronic aleukemic lymphosarcomatosis.

Group 3. Case No. 30. Mr. A. W., aged fifty. Referred by Dr. Peter Bassoe.

Previous History: Three months before coming under observation the patient was cystoscoped and a diagnosis of benign hypertrophy of the prostate was made. The tonsils were removed one year before coming under observation.

Present Illness: About four months before coming under observation patient noticed that he had trouble in starting the urinary stream. Frequency of urination gradually became marked; at present he is obliged to arise three to four times at night. Slight parasthesia of the fingers. Hands and feet, unusually cold. Before his admission to the hospital he noticed his gait was becoming unsteady.

There is a tingling sensation present in the bottom of his feet.

Physical Examination: Head and neck, negative. Four teeth showed infection and were extracted. Heart and lungs, negative. Abdomen, negative.

Rectal Examination: Prostate flat, thick, broad, and soft.

Cystoscopic Examination: A generalized very mild trabeculation of the bladder, very fine in character; also a small bar formation and some protrusion of the left lateral lobe into the bladder. The interureteric ligament, prominent and large.

Blood Count: Reds 2,750,000; whites 6,900; hemoglobin 61 per cent. Urinalysis: Negative for albumin, blood, sugar, pus and casts. Examination of the urinary tract was negative.

#### Diagnosis:

1. Primary Pernicious Anemia.
2. Spinal cord degeneration and bladder disturbance secondary thereto.

#### SUMMARY

1. The present-day urologist has a wide field of activity.
2. His problems touch upon many other fields of medicine besides his own.
3. His work is far from being a narrow and restricted zone.

#### OCCIPITOPOSTERIOR POSITIONS IN LABOR\*

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A few years ago I had the privilege of listening to Doctor De Lee in the presentation of a paper before the Englewood Branch of the Chicago Medical Society at which time he discussed some points which have been not only useful, but definitely beneficial to me in my subsequent work. In the following I give a statement of what he considered as the five most common errors in obstetric practice, viz: 1. A lack of complete obstetric diagnosis; 2. A lack of the knowledge of, or a failure to practice, the real principles of asepsis and antiseptics; 3. Ignorance of the course of occipitoposterior positions; 4. Operating before we have complete dilatation of the cervix; 5. Neglect of the mother and baby in labor because of inability to appreciate the pathologic dignity of the art of obstetrics.

It is a discussion of the third of these errors,

\*Read and discussed at the Washington Park Community Hospital Clinical Conference, June 15, 1928.



occipitoposterior positions, which concerns us at this time and for the sake of convenience we shall keep in mind occipito dextra positions rather than the occipito laeva, since the former occur more frequently than the latter.

There are two varieties of these positions. That is to say, nature has been sufficiently kind to give us two classifications, viz: 1. Those positions in which engagement occurs, and 2. Those in which there is no engagement. In the former, the occiput descends and there ensues either an arrest of labor with the sagittal suture in the transverse, or complete rotation of the occiput to the hollow of the sacrum, thereby becoming an occipitosacral position. In the latter, the head remains high and the occiput in a posterior position; a persistent occiput from the beginning.

*Diagnosis:* Instead of presenting the clinical points in the regular academic form I have reversed them to some extent, because one is primarily interested in the diagnosis and the prognosis of his case, since he usually makes his diagnosis before etiologic factors present themselves.

Externally, and in the first part of labor, one observes that the contour of the abdomen is of a gradual slope from xiphoid to symphysis. The breech is in the fundus. The small parts are easily palpable anteriorly and are very prominent, frequently giving one the impression that he has little with which to deal than a multiplicity of small parts. The shoulder is found to the right of midline and above the pubic ramus. The sin-ciput may be palpated above the left rami pubis. The fetal heart tones are heard best in the right flank and are distant from the auscultating ear. As labor progresses, normally, with descent and rotation the back moves toward median line. The fetal heart tones are most easily auscultated in the right, lower, abdominal quadrant midway between the linea alba and the crest of the ilium. The shoulder moves over to the left of midline and the occiput may be palpated just under the superior border of the right pubic ramus, giving rise to an occipito dextra anterior.

Internally, and again early in labor, with the palpating finger it is observed that the large fontanel is on the left side and anterior, while the small fontanel lies high up and near the right sacroiliac synchondrosis. The sagittal suture and the fontanels are, therefore, in the oblique

diameter. With descent and rotation the sagittal suture and the fontanels assume the transverse pelvic plane. In a long, drawn out labor, in a large majority of the cases, one observes the formation of a caput succedaneum with a consequent obliteration of the sagittal suture and the fontanels in which the ability of the attendant to make his diagnosis is masked. It is in just such cases that the location of an ear, with its point of direction, is of inestimable value, since it aids one in distinctly orientating himself and further enables him in placing his indication. Then, knowing that the conditions are fulfilled, he may definitely outline his method of procedure and follow it to its consummation.

*Prognosis:* In the first place, the prognosis depends largely upon the skill and the experience of the accoucher. The size of the passenger and the passages are, of course, factors which are also to be considered. The mortality and the morbidity for both the mother and the child are higher than in occipitoanterior positions; for the mother because 1. Of exhaustion from prolonged labor. 2. Perineal lacerations are imminent. 3. Sepsis occurs from frequent manipulations and operative procedure. 4. Postpartum hemorrhage from secondary inertia uteri is not rare. For the baby, 1. Asphyxia is not uncommon and 2. Operative delivery is frequently attended by danger in the hands of the untrained.

*Clinical Course:* In reviewing the clinical course it has been noted *first* that labor is slower and longer than in anterior positions, since the uterine contractions are more frequently weak and irregular both as to time and strength. This observation should be a cue to the attendant in that he should understand that there is either (a) some abnormality between the passenger and the passages, (b) that the fetal head occupies a position that does not permit its rotation and passage through the birth canal, or (c) that the powers are insufficient to bring about rotation. *Secondly*, early rupture of the bag of waters is frequent; as a consequence the head remains high longer than in anterior positions. *Thirdly*, with an early rupture of the membranes dilatation of the cervix is slower because the head does not conform itself well to the bony pelvis and it thereby fails to press down equally all the way round upon the internal os. Now we know, of

course, that the hydrostatic bag or the bag of waters, is far more efficient as an uterine dilator than the fetal head, because the former, during uterine contractions, does press down equally all the way round upon the internal os, more quickly accomplishing its purpose. *Lastly*, spontaneous delivery in occipitoposterior positions requires great uterine and abdominal effort because (a) the large occipitofrontal and occipitomentale diameters, rather than the smaller suboccipitobregmatic and suboccipitofrontal planes, have to pass through the outlet. (b) The chin becomes flexed upon the sternum, stretching the nape of the neck, forming an unbendable cylinder which is unable to accommodate itself to the birth canal. What happens? The perineum has to stretch greatly or tear, and lacerations occur in a large majority of the cases. (c) The head and the first part of the back have to pass through the pelvis simultaneously, and perineal lacerations are the rule rather than the exception.

*Terminations:* Four terminations are possible, viz: 1. Under strong pains the occiput rotates 90° anteriorly to an occipito dextra anterior and later, 45° more, completing its arc of 135° as it passes from behind the symphysis. 2. The occiput may rotate 45° anteriorly to the transverse plane and remain, becoming a "deep transverse arrest." Or 3. It may rotate to the transverse and be delivered from this position by peeling out under the right pubic ramus. 4. Rotation may take place posteriorly 45° to an occipitosacral position, the occiput occupying the hollow of the sacrum and terminate in the following manner: (a) Extreme flexion may occur and the occiput be forced downward and backward against the perineum which is greatly overdistended and practically always torn. Descent continues with the bregma as the point of direction until the forehead stems behind the pubis. The occiput then passes over or through the torn perineum after which the face appears from behind the symphysis. (b) The head may descend with deflexion with the forehead as the point of direction until the brow appears in the vulva. The glabella stems behind the pubis, the occiput rolls over or through the lacerated perineum and, lastly, the face makes its exit from under the pubic arch.

*Etiology:* In discussing this phase of the subject it may be said there are two factors to be

considered. *First*, those positions due to some interference with normal flexion of the head, as in 1. Military attitude, in which case the forces are so applied that the lever action necessary for flexion is nullified, since both levers are equal. That is to say, the occiput and the bregma strike the forces of resistance (the levator muscles) simultaneously, holding the head in the same axis as the body. 2. A flat pelvis, wherein more resistance is given to the occiput than to the sinciput, with a resultant deflexion. 3. Brachycephalia, in which a brow meets with resistance, giving rise to a deflexion attitude. 4. A long, drawn out labor brings about exhaustion of the powers before rotation has become complete. *Second*, those positions due to some factor which mechanically prevents rotation of the head through the right arc, as a large head; funnel pelvis; full bladder and rectum; large pelvis and small child; prolapse of fetal parts in advance of the head; vices of configuration of the bony pelvis, such as may be observed in poorly developed ischial spines; abnormal pelvic floor, as may be found in forward displacement of the coccyx; peculiar placental location; tumors of the uterine wall; an abnormal, forward inclination of the sacral promontory; a pendulous abdomen in which the convex back of the fetus better conforms to the curved, posterior wall of the uterus. A flat pelvis, as well as several of these conditions occurring under the mechanical features which prevent rotation, not infrequently gives rise to asynclitism with a prolonged first stage.

*Treatment:* Relative to the management or treatment of these cases, I take it for granted that the pelvic diameters are such that Cesarean or abdominal section has been ruled out and that the fetus is capable of being delivered per vaginam. As a routine I would suggest that an early and complete physical examination be made on each pregnant woman when she comes to engage one of us to attend her in a future labor. More, in fact, unless she has already experienced a normal delivery, both external and internal pelvimetry should be made. And while these measurements do not furnish us inviolable information, they are definitely useful and should be made on all primiparae, inasmuch as they enable one to be reasonably sure as to whether the



patient is capable of delivering a normal sized baby through the birth canal.

Further, as a foreword, it should be impressed upon the mind of the patient that in the first stage of labor she should *never* bear down. It is absolutely and always contraindicated, except for diagnostic purposes. It is not only useless but positively harmful, since it uses up the patient's strength needlessly and one runs the risk of rupturing the bag of waters. And I think it is almost universally conceded that these cases are *peculiarly* prone to an early rupture of the membranes with a consequent dry labor, thereby adding insult to injury to an already overburdened nature.

In the first stage of labor the abdominal examination should be made to determine, if possible, the cause of the posterior occiput. At this time the patient may walk about or lie abed until engagement occurs and the attendant should make it his business to *know* when this takes place. If the head is high it is best not to interfere, and the expectant period should be a time when the physician occupies himself in observing what the patient can accomplish rather than to see what she may endure. It is during this period that the parturient may be greatly relieved and every attention should be given her. Pantopon and scopolamine or pantopon and magnesium sulphate hypodermically, with rectal instillations of quinetheroil, may be given during this stage of labor provided a capable observer is left with the patient, if it is not possible that the physician may remain. If the first stage drags on and danger to the mother or to the baby be anticipated, it may be necessary to hasten dilatation of the cervix by use of the colpeurynter.

During the second stage, if the head remains high following complete dilatation of the cervix. it is advisable to anesthetize the patient, change the position to an anterior one by manual rotation, compressing the head into the pelvis by combined external and internal manipulations, or draw it down with forceps and leave the remainder of the course to nature. Of course, version may be resorted to, but the former is preferable unless the attendant possesses a definite degree of skill.

With the head engaged, watchful expectancy

is still practiced, because a large percentage of these cases terminate spontaneously in anterior rotation or at least to, or beyond, the transverse plane and become an easy forceps operation. Frequently, with the woman lying on the side towards which the occiput points, rotation is favored. Upward pressure on the sinciput during pains tends to increase flexion and to favor rotation.

Objection may be made to all these maneuvers on the score of introducing infective organisms into the birth canal. In any event, however, they should not be permitted to any great extent, and in no case may *much force ever* be used. The dicta of Doctor De Lee, "*Primum nil nocete*," and "*Non vi, sed arte*," ("*In the first place do no harm*," and "*Not by strength, but by art*,") printed in large, raised letters on bronze tablets and posted conspicuously in each of the delivery rooms of the Chicago Lying-In Hospital, referred to in every delivery he attends and practiced to the letter by most of those men whom he has trained in obstetrics are, in my opinion, among the first requisites which should be acquired by those in attendance upon labor cases.

With an indication for interference manual correction should be made under anesthesia; failing this, recourse may be had to version or forceps. And in the application of these instruments one should always bear in mind that they are to be used artfully and skilfully rather than with strength. In my association with Doctor De Lee in the delivery room I have yet to see him apply forceps or even to observe another in their application that he did not point out or refer to these latin phrases just used.

In the case of a primipara, if in a maternity hospital or in the obstetric department of a general hospital an episiotomy, in a large majority of the cases, is greatly to be desired because it not only enlarges the operative field, thereby facilitating the ease of delivery, but it prevents multiple, jagged tears and limits them in the plane of the incision which, of course, is healed at the end of a period of convalescence of ordinary length.

Again, quoting Doctor De Lee, "When a primipara goes into labor with the fetal head not engaged, in 99 cases out of 100 one may expect

trouble; and of the 99, 60 of them are going to result in occipitoposterior positions."

#### SUMMARY

1. Occipitoposterior positions, as compared with other anomalous positions in labor, are frequent.
  2. Infant mortality is high.
  3. Perineal lacerations are imminent.
  4. Sepsis occurs from frequent manipulations and operative procedure.
  5. A careful and complete physical examination, including both external and internal pelvimetry, should be made on all primiparae.
  6. Accurate diagnosis of existing conditions is indispensable.
  7. Except for diagnostic purposes, the physician should instruct the patient not to bear down until the cervix is completely dilated.
  8. Strict attention to asepsis and antisepsis should be observed.
  9. Complete dilatation and effacement of the cervix must be had before attempting any operative procedure.
  10. In occipitoposterior positions, as well as in deep transverse arrest, manual correction under anesthesia should first be attempted, remembering that changing the extension attitude to one of flexion is always of prime importance.
  11. Failing manual rotation, recourse may be had to version or forceps.
  12. "Primum nil nocere;" "Non vi, sed arte."
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#### A STUDY OF THE USE OF FASCIAL GRAFTS\*

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CHICAGO

There has been for some time an increasing interest shown in the study of the healing of fascia in the repair of various anatomical defects. Some of these studies have dealt with the normal healing of approximated structures such as occurs when the internal oblique muscle is

sutured to Poupart's ligament. The nature of this union has been an issue of dispute for several years. Such an eminent authority as Coley<sup>1</sup> states that a firm fibrous union is the usual result of their approximation by suture. McNealy,<sup>2</sup> Andrews,<sup>3</sup> Pitzman<sup>4</sup>, and many others have repeatedly called attention to the flimsy character of the union between these structures following the commonly accepted methods of hernial repair. In their observations at operations and at autopsy they found that in most cases the internal oblique muscle and Poupart's ligament were united by only a few fibrous bands which could be easily separated by blunt dissection. It was striking that such a weak union was commonly found in individuals whose hernias had been cured.

Seelig and Chouke<sup>5</sup> undertook some studies and experiments to demonstrate the extent and character of fascial and muscle healing under conditions quite similar to those occurring in operative hernial repair. In their animal experiments several very constant and important points were brought out. They found that when the internal oblique muscle was sutured to Poupart's ligament, as is usually done in a hernial repair, that separation occurred soon afterwards. They comment on the weak character of union between parallel fibers of muscle and fascia and between muscle and ligament.

Gallie and LeMesurier<sup>6</sup> likewise interested themselves in the healing of fascia. They showed that a simple incision in fascia will be followed by perfect healing provided no undue tension is present. If, however, the incision be subjected to tension, the defect will be covered with loose areolar tissue similar to that covering fascia elsewhere. They further showed that removal of the loose areolar tissue from the surface of the fascia with overlapping of the layers resulted in a firm union.

Koontz<sup>7</sup> made another step forward when he showed by his experiments that muscle will heal firmly to fascia when the contiguous portions have been freed of their overlying loose areolar tissue. He also demonstrated that by the cutting away of a small strip of the edge of the internal oblique and suturing this to the edge of Poupart's ligament which had been denuded of areolar tissue that an exceptionally firm union would result. Microscopic examination of the

\*Experimental work completed at Northwestern University Medical School.



union showed that the connective tissue fibers of the fascia had united with similar fibers derived from the epimysium, perimysium and endomysium of the muscle. This union corresponds to the simple healing of fibrous tissues. He concluded that the overlying veil of loose areolar tissue was the important barrier to firm union.

Either independently or stimulated by the foregoing experimental work there have been devised many operations for the repair of hernia which make use of these established principles of healing. Roberts and Roberts<sup>8</sup> describe a method of suturing a reflected portion of the aponeurosis of the internal oblique to Poupart's ligament. The object here is to unite fascia to fascia. Koontz and others<sup>9</sup> describe a method of suturing the internal oblique muscle to Poupart's ligament after each has been stripped of loose areolar tissue. Some twenty-eight years ago McArthur<sup>10</sup> suggested that strips of fascia taken from the external oblique aponeurosis be used as sutures to unite the internal oblique muscle to Poupart's ligament in the repair of inguinal hernia. This was recently suggested by McEachern<sup>11</sup> as a new procedure. Gallie and LeMesurier<sup>6</sup> have devised sutures made of strips of fascia which they have suggested may be woven in an interlacing manner through the tissues to repair defects of abdominal parietes.

It is at once apparent that these methods are directed toward securing a firm fibrous union of structures used to form a buttress of the parietes against a bulging peritoneum. It is common knowledge, however, that in the majority of indirect inguinal herniae there exists little if any necessity for increasing the strength of the abdominal wall. The high ligation and removal of the sac allows the opening in the transversalis or endoabdominal fascia to contract about the cord thereby restoring this region to its normal relations. This restoration of the normal valvular apparatus is paramount in protecting against the dynamic forces<sup>12</sup> that produce a hernia. Connell<sup>13</sup> called attention to this fact some twenty years ago, and again in a recent article. That such limited work as high sac ligation will effect a very great percentage of permanent cures is attested to by Lameris,<sup>14</sup> Pitzman<sup>4</sup> and others. The late Dr. A. J. Oschner many years ago called attention to the natural tendency

of the femoral ring to contract following removal of the hernial sac.

Andrews<sup>3</sup> has recently called attention to the importance of the endoabdominal or transversalis fascia in hernial repair. He describes a method of closing this defect in the transversalis wall by utilizing only transversalis fascia. He suggests that although that portion close to Poupart's ligament is too lax and thin to be of much value in repair, this thinness is always quite local and it is practically never necessary to go more than 2 to 3 cm. away from Poupart's ligament to find fascia of ample strength. He further states that he has found the transversalis fascia loose, elastic and movable in this area which permits of its being pulled down to Poupart's ligament with a minimum of tension.

While much thought has been directed to the repair of inguinal hernia, postincisional and other forms of ventral herniae have not seemed to stimulate the same interest. From our work we are inclined to the belief that the success or failure in these cases likewise depends in a large measure upon the efficient closure of any defect in the endoabdominal fascia. Unlike the defects of the abdominal wall found in inguinal hernia it is often impossible to approximate the edges of these direct hernial defects on account of their large size. It becomes necessary, therefore, to devise some plastic operation for their proper closure. Surgeons have apparently given much thought to methods directed toward the use of the rectus sheath or the fascia of the external oblique in the formation of buttresses to the bulging peritoneum and defective endoabdominal fascia. Other methods suggested include the implantation of fibers of animal fascia,<sup>15</sup> massive fascial grafts, fascia transposition,<sup>16</sup> living sutures made of fascia<sup>6</sup> and more recently the use of dead or preserved fascia<sup>17</sup> grafts inserted into various layers.

In our present study we have interested ourselves in two related problems of importance in the repair of ventral herniae. The first concerns the position a graft should occupy in the abdominal wall. The second concerns the behavior of dead fascia grafts which have been preserved in alcohol until used.

With regard to the first problem we have been impressed by the difficulty of producing herniae in experimental animals. Even the destruction

of great segments of the abdominal wall is seldom sufficient to produce herniae in dogs when the endoabdominal fascia and peritoneum remain intact. We conclude, therefore, that these two layers demand our greatest consideration. The strength, of course, is largely confined to the endoabdominal fascia. A proper closure of this layer outweighs all other factors combined in insuring a complete repair. It is often found that the defect is of considerable size and it can be only partially closed or if completely closed the tissues are subjected to such tension that a very poor union takes place. (*Vide supra.*) It is here that grafts find their greatest field of usefulness.

When a graft is used it should if possible be insinuated between the peritoneum and endoabdominal fascia with the edges of the graft extending beyond those of the defect. Where this is impossible or not expedient on account of anatomical difficulties it may be placed just without the endoabdominal fascia overlapping the edges of the defect. These two sites we believe are the only ones which will show any considerable number of cures. One will occasionally be rewarded by success where a transplant is placed in the sheath of the rectus or in the external oblique fascia. Such cures evidently depend more on good fortune than sound technic.

The second problem—that of using fascia grafts preserved for variable periods of time in 70% alcohol seems to us worthy of consideration since in many instances there are obviously decided disadvantages to the employment of autogenous grafts. These preserved grafts may be used in the whole or as strips for sutures.

*Experimental work.* In our experimental work on dogs we used grafts taken from dogs previously operated on and from human cadavers and preserved for from three weeks to three months in 70% alcohol. These grafts were sutured into defects of the abdominal walls of ten dogs. For suture material we used black silk as interrupted sutures. In these experiments we found that practically all the grafts were rather rapidly invaded by the surrounding tissue cells and bloodvessels. A complete vascular film of loose areolar tissue was soon thrown across their upper and lower surfaces from which small vessels penetrated between the graft fibrils.

In the older grafts it was apparent that live tissue was gradually replacing the grafts. Our work is in accord with similar work reported by Koontz.<sup>18</sup> We have made clinical use of these two propositions by transplanting an alcohol preserved fascial graft into a defect in the transversalis fascia of a large ventral hernia. The graft was placed just without the transversalis fascia with the edges of the graft overlapping the defect and held in place by interrupted sutures of black silk. The graft healed in place with no untoward reaction, and remained so on reexamination eighteen months following operation.

#### SUMMARY

Our experimental and clinical work seems to strengthen our impression that an intact transversalis fascia is exceedingly important in preventing the development of any type of direct hernia. We are likewise of the firm conviction that in the cure of such direct herniae attention should be directed to the repair of any defect in this structure. We feel that in the use of grafts or transplants their position should be either between the peritoneum and transversalis fascia or just outside this fascia with their edges extending beyond those of the defect. In those cases where there is some valid objection to the employment of autogenous fascial grafts, we believe that alcohol preserved grafts may be used to good advantage.

#### CONCLUSIONS

1. Clinical application of the recent studies of the healing of fascia will serve to improve the treatment of herniae.

2. The position of fascial grafts with reference to the layers of the abdomen is very important.

3. Alcohol preserved fascia may be used for the repair of fascial defects when for any valid reason autogenous grafts cannot be used.

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## AGRANULOCYTOSIS — REPORT OF A CASE WITH ANAL ULCERATIONS

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CHICAGO

So little is known of this usually fatal disease that a case coming under our observation is here reported together with a review of the literature.

In 1922, Schultz<sup>1</sup> described a group of cases presenting severe gangrenous stomatitis and unusual blood pictures occurring in women of middle life with negative past histories. All cases died in three or four days of pneumonia. Because of the peculiar damage to the granulocytic blood cells associated with stomatitis, Schultz described it as "Agranulocytic Angina".

The etiologic agent has not yet been determined and it is difficult to attach much significance to the varied bacteriologic findings. The inflammatory sites wherever found have a similarity of appearance. The lack of cellular response must be the result of the general decrease of cells in the circulating blood.

**Symptoms.** All the early cases were in middle aged women and with few exceptions that rule still holds. A few cases have been reported in males. Vos and Staal<sup>2</sup> reported a case in a man aged 30 years. Zadek<sup>10</sup> a young man of 20 years.

The onset is acute with chills, severe headache, general malaise and sore throat. The temperature is always high, varying from 103 to 105 and the pulse correspondingly elevated to 120 to 140. There is pronounced feeling of prostration and of severe pain. The patient is very restless and often irrational.

Rapidly spreading ulcers are invariably present on the tonsils or pharyngeal walls, and often on the larynx, tongue or gums Cannon.<sup>3</sup> These ulcers are 2 to 3 cm. in diameter, with a central, yellow, soft necrotic slough and sometimes a tenacious exudate that resembles diphtheria. It is without any adjoining hyperemia or definite demarcation.

The inflammatory sites wherever found have a similarity of appearance. A fetid odor from the mouth is mentioned by Kastlin<sup>4</sup> and Lovett<sup>5</sup> but this is not constant. Cultures from the mouth were negative for *B. diphtheriae* and positive for hemolytic streptococcus in some cases and for *B. pyocyaneus* in others; but the results are not uniform. Blood cultures during life are sterile, Elkesles,<sup>6</sup> but Piette<sup>7</sup> feels that these bacilli require a special medium.

As more clinical and pathological material are studied it is discovered that the ulcerative lesions are not confined to the mouth. Kastlin in a review of 43 cases collected from the literature found extra-oral ulcerations located as follows:

	No. of cases
Stomach, multiple small lesions.....	6
Large ulcers .....	3
Duodenum .....	2
Colon .....	5
Rectum .....	2
Anus .....	4
Cervix .....	2
Vagina .....	8
Symphysis .....	2
Hip .....	1
Conjunctiva .....	1

The genitalia are involved with ulcerations, similar in appearance to those in the mouth, in many cases. Cannon, referring to his case, says "The ulcers in the anal region were so painful that the physician was forced to give the patient a general anesthetic in order to examine her. It is of interest to note that ulcerations have been found in all portions of the mucous membrane and on the skin. Petri<sup>8</sup> reported a case with necrotic processes throughout the entire digestive tube. Schnabl<sup>9</sup> had a patient with gan-

grenous ulcerations in the mouth and pharynx and an aphthous vulvitis. Besides these, there were nodules resembling erythema nodosum, in the skin and subcutaneous tissues of both legs. Schultz emphasizes that there is no general hemorrhagic diathesis but Lauter<sup>11</sup> mentions a case where petechial cutaneous hemorrhages were found distributed over the whole body.

Usually there is slight but distinct regional glandular swelling, in some cases no adenitis; there being very little reaction or resistance to the rapid spread of the ulcers.

Characteristic changes are produced. Schultz and Jacobwitz<sup>12</sup> consider the blood findings the most characteristic feature of this disease. The leucocytes are diminished down to a few hundred, the polymorphonuclears and eosinophiles being possibly obliterated, also diminished lymphoid elements; there are very few white cells in the blood picture but there is no material change in the red cells or hemoglobin. These blood changes are noted even at the start of the disease, at a time when the local affections can be relatively slight.

Jaundice of a variable degree is always present but there is no cutaneous hemorrhage.

The liver and the spleen are of normal size or only slightly enlarged.

The time relation between the appearance of the blood changes and of the mouth gangrene is of importance. Three cases developed in the hospitalized patients who had been admitted for

Unexplained jaundice—Ehrmann and Preuss<sup>13</sup>

Tubercular arthritis—Bantz<sup>14</sup>

Fracture of the tibia—Hunter<sup>15</sup>

In all of these patients the blood cell and differential counts on admission were normal. While under treatment, acute sore throat developed followed by ulcerative stomatitis. In each instance, changes were noted in the blood prior to the tissue change. Lauter observed that the height of the disease occurred on the day gangrene appeared. Bantz found a disturbance in balance between the demand and production of blood cells so that the progress of infection is not combated. With such a lack of resistance to infection, it is not remarkable that necrotic lesions find distribution in locations which harbor infective organisms. These lesions thus arise secondary to the blood changes.

There seems to be no recognizable pathologic

antecedents; the disease develops rapidly, and usually ends in broncho-pneumonia. The average duration of the illness is from three to eight days, the extremes being two days and forty days. In Kastlin's study the disease resulted in death in 40 cases and in recovery in 3 cases. Schultz<sup>11</sup> reported a case with recovery. The tonsillitis appeared late, which speaks for the theory that the tonsil is only a point of localization of the disease, not a portal of entry. Moore and Wieder<sup>17</sup> report a case in which the patient completely recovered from the first attack, but succumbed to the second attack two years later. In the study of cases that recovered the blood and clinical state improved simultaneously. The gangrene quite rapidly healed but the blood cells more slowly returned to normal.

The autopsy findings are characteristic and uniform. There are no constitutional anomalies. The most signal anatomic change is found in the bone marrow which appears to be the seat of the disease. Macroscopically the marrow is red at some places and fatty at other parts. Microscopically the neutrophile cells of the marrow and their precursors are altogether missing or are greatly diminished in numbers, while the lymphoid and red cell forming elements are slightly, if at all, reduced.

These changes in the bone marrow are not seen in any other disease than agranulocytosis, which consists essentially of a lesion involving exclusively the leukopoietic function of the bone marrow.

The etiology is not clear, there is no anemia, no disturbance of coagulability, no hemorrhagic tendency. The bacteriologic findings are not uniform. The assumption is that an unknown, probably infectious-toxic agent injures in the first place the granulocyte apparatus. This granulocyte defect may then lower by means of the hormones and through elimination of an anti-microbic factor the power of resistance so much that necroses appear at different parts of the body. From this viewpoint the gangrene and sepsis are secondary and the role of the tonsils is without importance in the etiology.

Leon<sup>18</sup> considers this condition a previously undescribed clinical entity because of the blood picture occurring in females.

Leon<sup>18</sup> shows that with increasing study of cases the extent of the ulcerations and the



presence of hemorrhages varies. Lauter was the first to report a case that recovered. Rotter<sup>19</sup> reported the first case in a male.

Weiss<sup>20</sup> believes that the lymphatic reaction and agranulocytosis are no independent clinical pictures, but are rare hematologic reactions in severe septic diseases. The nature of the reaction is determined by the condition of the blood forming organs, which depends on unknown factors. All patients with a blood picture which showed agranulocytosis died; all those with a pronounced lymphatic reaction, without injury to the agranulocytic system recovered.

*Treatment.* Therapeutic measures so far have failed. This may be due, partly at least, to the fact that the cases have been in an extreme condition when first seen by a physician.

The resemblance of the cardinal symptoms of agranulocytosis to those of Vincent's angina suggested treatment that has been found curative in the latter disease. Sodium perborate in two per cent. solution, used as a mouth wash and held in the patient's mouth for five minutes while an oxidizing froth develops was without result.

Where the possibility of diphtheria has been entertained no change in the throat exudate has been noted following the injection of diphtheria antitoxin.

Arsphenamine and neorsphenamine solutions have been used locally and also intravenously. As a local treatment of the mouth and ulcers, arsphenamine has been used in ten per cent. solution in glycerine, as recommended by Reckford and Baker<sup>21</sup> for the treatment of Vincent's disease but it has not proved satisfactory. Moore and Wieder observed a gradual improvement after the mouth and tonsil were treated with powdered arsphenamine.

Blood transfusions have proved futile. Leon avoids intravenous treatment because of the danger of necrosis.

One ray of hope however is offered by Friedman<sup>22</sup> who reports healing following irradiation of the long bones in four cases, and thinks it probable that the disease is not an infection, but originates in endogenous disturbances, perhaps of endocrine nature.

Case 72428—Mrs. A. D. seen with Dr. R. A. Melendy. About July 15 she noticed a frequent desire to defecate, an urgency which increased in intensity until by July 19 there was continuous severe pain at the anus, up

within the rectum, in the bladder and in the left hip. On July 20 she complained of sore throat. The throat symptoms did not at first attract attention because for years she had suffered with repeated attacks of sore throat. A year ago she had her tonsils removed but has ever since had attacks of sore throat. On July 23 following an enema, given to relieve the rectal fulness, she had a chill lasting 10 minutes, followed by fever and later a profuse perspiration.

On July 24 she was admitted to the Chicago Memorial Hospital. She was able to walk, with assistance, but appeared very ill and also said she felt weak but was not suffering acutely at that moment. Physical examination demonstrated a red pharynx; a few glands palpable in the neck; heart, lungs and abdomen negative. On the right side of the anal orifice, and within the rugae, was a small area denuded of skin and covered with a light grey membrane. There were regions of induration on both sides of the anus and the whole intergluteal cleft was exquisitely painful on palpation. The rectum was immediately inspected under anesthesia but no pathology was noted within the cavity. Later, the same afternoon, crucial incisions were made through the indurated structures and the hardened tissues also injected with potassium permanganate solution.

The next day, July 25, she had several vomiting spells and attacks of syncope and dyspnea. Hot sitz baths alternated with hot moist fomentations to the perineum were continued all day. As night came on her temperature rose to 104 degrees and she became very restless.

At 3 a. m. on July 26 1000 c.c. of 3 per cent. glucose-saline solution were given hypodermically and this was repeated at 9 a. m. At 8 a. m. her temperature was 105.6 degrees but shortly thereafter impending dissolution evidenced, her pulse at 140 became weak and after 10 a. m. could not be felt in the radial vessels. Her breathing increased to 36 and became very shallow. At 12 noon her temperature was 100.6 degrees. Digifoline had been begun early in the morning, and this was reinforced with caffeine sodium benzoate later. The patient did not respond. About 11:30 she collapsed. Ten c.c. of boiled milk were injected hypodermically. Her breathing became labored and shallow, her heart action weaker, marked cyanosis and pallor of the lips, cheeks and extremities appeared and at 12:45 noon, two days after her admission she died.

Blood counts taken on July 24 and at 8 a. m. on July 26 showed:

Leukocytes .....	8,400	1,100
Small lymphocytes .....	11	84
Large lymphocytes .....	13	12
Transitionals .....	3	....
Neutrophiles .....	71	4
Eosinophiles .....	2	....

No organisms could be seen in the blood smear. The throat culture showed a mixed culture, with nothing characteristic. The rectal culture showed a small gram positive cocci and a short, fat gram positive bacillus.

Autopsy performed 2 hours postmortem: The body

is that of a white female adult about 45 years of age. There is marked rigor mortis present, despite the fact that the body is comparatively warm. There is present an old healed McBurney's incision. The inferior half of both nates are indurated, swollen and discolored. At the anal margin there are two horizontal incisions and the induration extends for a short distance into the anus. A portion of the epithelium on the right side seems to be ulcerated and the area is covered by granular, greyish material. The swelling extends anteriorly to the labia which are likewise indurated, but there is no loss of epithelium. Sections are taken from the labia and also from the anal margin. The tissue is very edematous. There is no crepitation present in this tissue nor in any of the tissues of the body. The odor is foul but not characteristic. There is no edema present. When the mouth is pried open, an ulceration just posterior to the tonsil on the posterior pharyngeal wall can be seen, the ulcer being covered by a grey granular membrane and measures 6 m.m. in diameter.

*Internal Examination.* On opening the chest there is found no fluid in either pleural cavities. There are but few adhesions present at the right apex. These are firm and fibrous, but are easily broken. On the surface the lungs are greyish white in color with rounded areas of carbon pigmentation which is not as marked as is usually found. Crepitation is diminished throughout both lungs, particularly at the bases. Upon section the tissue is red in color and at the bases there is some increase in fluid and moisture of the tissues. No areas of consolidation are present. The left lung weighs 550 grams and the right lung weighs 600 grams.

The pericardium does not contain any increased amount of blood. There is a large quantity of epicardial fat. When the heart is opened it is seen that the musculature is brown, somewhat flabby, but not hypertrophied. The endocardium is thin, smooth and glistening. The right auricular and ventricles are dilated, the tricuspid valve permitting the admission of four fingers. The valves are thin and smooth except for a few areas of atheromatous thickening in the mitral. The aorta shows very few areas of atheromatous change in the intima. On the whole the aorta is markedly free of any sclerotic change and is quite elastic.

The abdominal wall is thick, and there is a marked amount of subcutaneous fat.

The peritoneal cavity is free of fluid. The peritoneum is thin, smooth and glistening. The intestines are not distended. There are a few adhesions around the cecum to the peritoneal peritoneum.

The liver is enlarged, extending about two fingers below the costal margin. The surface is smooth and has a slate gray, reddish appearance. The organ feels flabby. Upon section the parenchyma has a ground glass, opaque appearance, the lobules are swollen, so that the central veins do not stand out distinctly, and the tissue has a yellowish blotchy appearance, especially under the capsule is this yellow change most

marked. The tissue itself is soft, and on pressure with a finger can be torn.

The spleen is somewhat enlarged, smooth on the surface, elongated, and of a slate grey color. The capsule is not thickened. Upon section, although the organ feels rather flabby, the pulp is quite firm, and the Malpighian bodies can be made out. Some of them appear rather glary and mucoid. There is no increase in fibrous tissue.

The pancreas is elongated, lobulated, yellowish white in color and there is no gross increase in connective tissue.

The adrenals are flattened structures, equal in size, and upon section the cortex is fairly thick and yellowish in color.

There is a considerable amount of peri-renal fat present. When the kidneys are removed, it is found that the capsule strips with slight degree of difficulty, leaving a surface which in areas is finely granular. The fetal lobulations are still visible. Section of the kidneys shows the cortex to be fairly thick. The striations are still visible, but the kidney parenchyma is cloudy and somewhat swollen as are also the columns of Bertini. The demarcation between cortex and medulla is quite distinct. The pelves are somewhat dilated but there is no injection of the mucosa. The ureters are not dilated. The renal artery shows no thickening.

The uterus is atrophic as are the ovaries. The fimbriae of the tubes are free. There is no change in the vagina.

The trachea, esophagus, part of the tongue and pharynx are removed. At the base of the tongue, near the epiglottis, on either side there are present two areas of ulceration measuring about 0.8 c.m. in diameter, the ulcers appearing rather punched out, sharply defined, the borders being edematous, and the base of the ulcer is covered by a greyish membrane. The posterior pharynx is injected. The lymphoid tissue is hyperplastic.

Section of the ribs and of the spine shows the bone marrow to be porous and pale in color. Smears of the bone marrow are taken.

The gastro-intestinal tract shows no gross pathological change except for absence of the appendix with a few adhesions around the stump.

Distinctive clinical features of this case.

Rectal pain was the complaining symptom all through the illness. It also antedated the throat manifestations.

She had been ill ten days when she was still able to walk into the hospital. Two days later she died.

She had no evidence of pneumonia.

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## THE "HEART MENACE" IN THE UNITED STATES

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*Cardiology a Neglected Subject.* The art of healing ceased to be an art and became a science at the time when definite signs and symptoms were first associated with definite pathology of an organ. Formerly, our predecessors considered it a great accomplishment even to know that it was from heart or lung disease that a patient suffered. They thought it impossible for the practicing physician ever to be able to distinguish one disease from another. Now we have

an accurate understanding of disease. No longer do we simply say "lung trouble," but lobar pneumonia," "bronchial asthma," "bronchiectasis," "pulmonary tuberculosis." It is no longer "nervous trouble," but "general paresis," "tabes," etc. Instead of designating stomach disorders merely as "stomach trouble," we now classify and identify them as "gastritis," "gastric ulcer," "carcinoma of the stomach," etc.

Treatment also is no longer empirical, but is based upon the accurate knowledge of disease, which causes definite pathology and which in turn produces definite signs and symptoms. It is obvious that the treatment of pulmonary tuberculosis differs from that of bronchial asthma or that the treatment of a gastric ulcer differs from that of carcinoma of the stomach.

However, in diseases of the heart we still neglect to make an exact diagnosis; and while it would be considered unscientific to call a definite disease associated with the lungs, merely "lung trouble," without specifying the exact nature of the trouble, we do not hesitate to call a definite disease associated with the heart, just "heart trouble." The reason for such negligence is that the diagnosis of heart disease is too often based upon the presence or absence of a heart murmur, while the essential features of heart disease, such as the size, rate, rhythm, and the response to effort are entirely overlooked. Still, the heart is the most vital organ of the body, and as soon as we enter the domain of cardiology, we at once realize the immensity and complexity of the subject.

During recent years an extraordinary amount of progress has been made in this particular branch of medicine; nevertheless, comparatively little use has been made of the knowledge available. Still, the prognosis and treatment so often depend on the specific diagnosis of a heart lesion.

*The Fear of Heart Disease.* How often do we read in the papers that Mr. Jones or Mr. Smith dropped dead "presumably of heart disease," while riding in a street car, or while sitting in a restaurant, or while playing golf, or while sitting in his office. There is no wonder that the pronouncement by the physician of "heart disease" spells terror of possible death at any time without warning and causes such a terrific blow to the patient and his family.

*The Good and Bad Effects of Insurance Ex-*

aminations. Since health and life insurance are developed in this country more than anywhere else in the world, almost everybody at one time or another undergoes some sort of examination through this medium. Many people are justly or unjustly rejected as "bad risks," and such rejections leave an extremely bad impression on the rejected candidates. A good many such individuals go on living for many years, as if to spite the insurance companies. But what is life in constant fear of dropping dead without warning?

Thus, the benefit derived through that medium, in sounding a warning to the rejected candidates to "go easy" and possibly to seek medical advice, is often offset by the fright into which the candidate is thrown. Many such individuals become conscious of their hearts, which possibly never troubled them before. They brood over their newly discovered condition and become neurasthenics for the rest of their lives.

*Mortality due to Circulatory Diseases.* As a matter of fact, the problem of heart disease is actually alarming, and that something must be done to relieve this menace is evident even from the few statistical data which are presented in the following tables:

UNITED STATES<sup>1</sup>

Table 1			
Year	Population	Mortality heart and vascular diseases	Per 100,000
1910	92,000,000	236,204	256
1924	112,000,000	329,511	294
			36

Thus, in 15 years, the mortality from circulatory diseases increased by 38 per 100,000.

EUROPEAN COUNTRIES<sup>2</sup>

Table 2. England			
Year	Population	Mortality heart and vascular diseases	Per 100,000
1910	35,791,902	71,965	201
1924	38,746,000	79,428	205

Incease during 15 years..... 4

Table 3. Germany			
Year	Population	Mortality heart and vascular diseases	Per 100,000
1910	64,568,950	98,695	153
1924	59,852,832	51,740	87

Decrease of ..... 66

Table 4. France			
Year	Population	Mortality heart and vascular diseases	Per 100,000
1910	39,525,000	55,411	140
1924	39,209,518	Not available	...

Table 5. Italy			
Year	Population	Mortality heart and vascular diseases	Per 100,000
1910	34,876,610	63,533	185
1924	37,828,543	63,745	171

In 14 years there was a drop of..... 14

Table 6

		Per 100,000
1910	Mortality heart and vasc. dis., United States.	256
1910	Mortality heart and vasc. dis., England.....	201
		55
		Per 100,000
1924	Mortality heart and vasc. dis., United States.	294
1924	Mortality heart and vasc dis., England.....	205
		89

Table 7

		1910	1924			Per 100,000
U. S.	.....	256	294	Rise		38
England	.....	201	205	Rise		4
Italy	.....	185	171	Drop		14
Germany	.....	153	87	Drop		66
France	.....	140	Not available			

MORTALITY DUE TO HEART DISEASE<sup>3</sup>

Chicago		
Table 8		
Year	Deaths	Deaths per 100,000
1905	2110	108.3
1910	2942	133.9
1915	4195	170.2
1920	4909	179.9
1921	4730	170.1
1922	5498	194.1
1923	5547	192.1
1924	5617	191.1
1925	5309	210.6

PHYSICIANS<sup>4</sup>

Table 9					
Year	No. phys. in U. S.	Mort.		Per 100,000	%
		causes	lar dis.		
1910	137,000	2324	378	275	16
1924	145,000	2433	893	611	36
				Increase..	336 20

Table 10  
Mortality, United States, Per 100,000

Year	Tuberculosis all forms	Cardio-vasc. dis.
1910	160	256
1924	91	294
Decrease.. 69		Increase.. 38

SUMMARY AND COMMENT

1. The mortality rate from cardio-vascular diseases in the United States is steadily increasing; the increase is not accidental but constant.
2. The mortality rate from cardio-vascular diseases in the United States leads all other countries, not excluding even as highly an industrial country as England.
3. While the death rate from cardio-vascular diseases is increasing in the United States, it is decreasing considerably in all other countries except England, where it shows an almost negligible increase.
4. In no other country is the mortality rate



from cardio-vascular diseases as high as it is in the United States.

5. The cardio-vascular death rate per 100,000 during the fifteen years shows an increase in the United States of 38; in Chicago, 57.2, and amongst physicians, 336.

6. In Chicago, which is a typical large industrial center, where everybody is under a greater strain, where there is always greater rush, the increase in mortality from cardio-vascular diseases is one and a half times greater than that of the whole United States.

7. Physicians, who are subjected to a double strain, mental and physical (this includes the driving of their automobiles, climbing stairs, being out in bad weather, fatigue due to loss of sleep and long hours of work) contribute the highest mortality, the increase in fifteen years being 336 per 100,000, or six times greater than the increase in Chicago, and nine times that of the whole United States. Thus, the greater the strain, the greater the mortality from cardio-vascular diseases. (Tables 1, 3, 9.)

8. The mortality rate from cardio-vascular diseases leads all other single diseases in the United States, not excluding even as menacing a disease as tuberculosis.

#### RUSH AND FAST LIVING OR HYPERTENSION DELUXE

The above facts are appalling enough to compel immediate attention. Wherein lies our failing? We know the value of sports, fresh air and sunshine; we know the value of vegetable foods; we know all about vitamins; we have the best organized health departments; we have wonderfully comfortable homes; we know the value of cleanliness, sanitation, and personal hygiene; we have pure drinking water; we have running water and bathtubs; on the average, the workers of this country earn more, eat better and live better than those in Europe. Why, then, so many cardio-vascular cases and such high mortality from them? To answer these questions clearly, we must go back to the various causes of cardio-vascular diseases. These may be divided into the following groups:

#### GROUP A. Unavoidable Causes:

1. Congenital.
2. Heredity.
3. Contagious and infectious diseases.
4. Focal infections which produce no perceptible symptoms attracting the patient's attention, and which, likewise, are not easily detected by the physician.

#### GROUP B. Avoidable Causes:

1. Focal infections which attract the patient's attention by producing local symptoms and which are easily recognized by the physician. The timely elimination of such foci of infection will often prevent or check cardio-vascular complications, or at least retard their progress.

#### 2. "Hypertension de luxe Americana."

This cause is of particularly great importance, since it is a cause of our own creation, and has no legitimate reason for existing. The physical and mental over-strain of our American life due to rush and fast living cause hypertension, which may be called "rush hypertension," or "hypertension de luxe Americana," since it is typical of the tension of our American way of living.

The manner in which this hypertension will affect the cardio-vascular system, may be summed up thus:

(a) When the heart and blood vessels are already affected, this hypertension will throw an extra burden on them and aggravate the condition already present.

(b) When there is no cardio-vascular disturbance present, it will often cause such to appear at a time when the individual has reached middle age. At that time the blood vessels are not elastic in the same degree as in a younger individual, and do not respond as easily to the burden thrown on them by the strain of irrational behavior. This hypertension which is at first transient, and responds easily to rest, will in time become permanent, and cause cardio-vascular collapse, with the usual tragic results.

Why does this hypertension affect us more than the Europeans? "Rush," is the answer.

The Europeans coming to this country immediately notice our "rush." Everything seems to be in a whirl; we rush to the train and are proud of the fact that we reach the train with one minute to spare. We rush to work. We rush to play golf and other sports and recreations. We rush to bed and rush to arise. We are never calm. The heart is rushing, the pulse is rapid. We relax neither in mind nor in body.

The Americans coming to Europe notice just the reverse. The people there are calm; they do not rush. They seem to have time for everything. They take two hours for luncheon, and have frequent holidays. In many places they even take afternoon tea.

Thus, people in Europe have time for a long

midday rest and an additional rest in the afternoon. How many of our bankers, not to mention clerks and laborers, will give up their valuable time to such seeming trivialties? Still, it is just such "trivialties," or tendency to relax, which are of such vital importance.

Of course, there are many cases of heart disease which cannot be prevented; but there are, on the other hand, many preventable cases, which, even when already developed, can be mitigated by leading a life of lesser tension.

*What Is to Be Done?* The physician must make an endeavor to recognize the disease in its earliest stages and, by proper instruction to the patient, help check its progress and thus prevent further complications.

When the disease is already developed, it should be recognized in all its detail, and should be handled not as "heart trouble," but as the particular type of heart disease.

We must bring the problem of "heart menace" before the public. The cry must be raised that we are in danger of becoming a nation of cardiopaths, and that to save ourselves, we must reduce our speed. For this purpose, special lectures and demonstrations should be given under the auspices of organizations especially interested in this work.

*Heart Associations.* Several organizations of this kind, known as "heart associations" are already in the field. They have been organized by groups of public spirited citizens for "the purpose of prevention and relief of heart disease." On their boards of directors are the names of the most distinguished physicians of the respective cities, and they are under excellent management. A great deal has already been accomplished by them, but their force is still limited and their funds insufficient. It is doubtful whether these organizations, purely humanitarian in aim, can, under such circumstances, carry out so vast a program unless the public gives them moral and financial support.

In order to carry on their program, these associations require more publicity and a larger staff of well-trained workers, such as physicians, nurses, and social workers, able to approach the public systematically and point out the terrible menace of heart disease, which already exceeds

in mortality rate all other single menacing diseases, not even excluding tuberculosis.

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## PRIMARY CARCINOMA OF THE TYMPANO-MASTOID\* WITH REPORT OF A CASE

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Carcinoma originating in the middle ear and mastoid cells is a decidedly rare clinical condition. Malignant epithelial invasion of the tympano-mastoid, following an extension from an epithelioma of the auricle is by comparison much more frequently observed. Probably most otologists, even those engaged in very active practices, go through life without ever encountering a primary middle ear cancer, although they may see malignancy of the auricle with extension into the middle ear and its communicating spaces quite frequently. The rarity of the condition is more easily appreciated when one notes that Bezold<sup>1</sup> observed only one case in his reported statistics covering over 15,000 cases of ear disease. Milligan<sup>2</sup> in a careful perusal of the records of the London Hospital was unable to find a single case over a period of ten years although the yearly average attendance is well over 200,000 patients. Many standard texts do not mention the condition and Beck with his enormous experience does not describe it in his Pathology of the Ear, Nose, and Throat. Leveque,<sup>3</sup> quoting Dupon, estimates that 1 in 10,000 cases of chronic otitis media exhibits malignancy. Zeroni<sup>4</sup> in an exhaustive search of the literature prior to 1899 was able to collect 121 cases published during the preceding 95 years. Many of these were probably not malignant as a large number were reported before the days of microscopy and before a true pathological conception of cholesteatoma was evaluated. Neu-

\*From the Clinic of Drs. J. C. Beck and H. L. Pollock.



hart<sup>5</sup> collected 34 more cases from 1899 to 1916 only 8 of which were reported in this country. In view of the large number of chronic discharging ears that persist over long periods of time, the manifest rarity of this condition is difficult to explain if one accepts the theory of chronic irritation as the important causative factor in the production of malignancy, although, almost all cases reported in the literature gave a history of a preceeding otorrhea. The extreme rarity of this condition prompts the report.

E. S. was seen on May 12, 1927, complaining of pain in his left ear associated with discharge and a paralysis of the face on the same side. He was 59 years of age and had been in good health until several years previous, when he experienced some ear trouble that left him with a discharging ear. The discharge was only moderate in amount and did not bother him a great deal. In November, 1927, he had an attack of pain in the ear and sought consultation with a specialist who informed him that he had a polyp of the ear and advised him to have it "burned off" by local applications which he proceeded to do. He had a number of these cautery treatments and no progress being made he consulted another specialist who removed the polyp and told him he had a chronic mastoid and advocated a radical mastoid operation which was performed on January 7, 1927. The posterior wound healed well but the bloody discharge continued and the pain in the ear became more aggravated. He lost weight, became pale and weak and in March about eight weeks after the operation noticed that his face on the side of the affected ear was becoming paralyzed. Three weeks later the gland in front of his ear began to swell and the movements of his jaw were impeded until at the present time he moved it with difficulty.

His past history and family history were inconsequential.

Examination disclosed a debilitated male, decidedly pale appearing and extremely weak. A facial paralysis of the complete type was noted on the left side. He could not whistle or perform any of the usual tests for facial paralysis. The nose was negative. The denture was in good repair, tongue coated, tonsils apparently inoffensive and pharynx and larynx presented nothing noteworthy.

The right ear contained a little cerumen and after removing it the drum was seen to be opaque with a distorted light reflex.

The left ear showed a well healed postauricular wound. The canal was filled with a sero-sanguineous discharge and upon wiping, exposed a marked dermatitis of the canal. Deeper in the canal were a number of pinkish granulations that were much firmer than usual and of a pearly color. The profuse growth prevented one from distinguishing any parts beyond. The preauricular gland was enlarged and the surrounding tissues infiltrated by a firm hard substance. The

mandibular joint evidenced a partial ankylosis. Glands in the anterior and posterior triangles of the neck were also infiltrated. On account of the unusual character of the affection a portion of the granulations was biopsied.

The blood showed the following: R. B. C. 3,200,000; W. B. C. 7,200 Hb, 70 percent; Differential Polys. 69 per cent.; S. L. 24 per cent.; L. L. 4 per cent.; Eosin 2 per cent.; Trans. 1 per cent.

Wassermann and Kahn negative.

Urine negative.

X-ray of the right ear disclosed a sclerotic mastoid with complete obliteration of the cells. The left ear showed a large operative exenteration of the mastoid terrain. The tegmen tympani and antri as well as the floor of the cranial fossa overlying the mandibular joint were thickened.

The history of the discharge, the profuse granulation formation with the subsequent facial palsy not due to operative trauma or postoperative swelling of the nerve, associated with the peculiar pearl pink and firm granulations, the involvement of the glands of a stony hard nature and the cachectic appearance, all served to point to a diagnosis of malignancy of the middle ear, which on report of the biopsy, was proven correct.

Biopsy showed typical infiltrating masses of large prickly cells with pronounced tendency to pearl formation. Diagnosis: Squamous cell carcinoma originating in middle ear.

In view of the extensive glandular involvement the outlook was poor and operation contra-indicated. He was advised to return to his physician and receive palliative radiotherapy.

Carcinoma as a clinical condition in which the primary growth is found in the middle ear is decidedly less common than epithelioma of the auricle with secondary extension into the tympanic cavity. The latter is not so rarely observed. The neoplasm as a rule has its origin in the cavum, although the tympanic end of the Eustachian tube and the mastoid cells may also be the site of the primary growth. There is in practically every case a preceding long continued discharge subsequent to a middle ear infection and perforation of the membrana tympani, although apparently carcinoma may appear in a case without any previous middle ear disturbance.<sup>6</sup> It is for this reason (the otorrhea) that the growths protruding from a perforation in the drumhead are so often misdiagnosed as innocent granulations subsequent to aural suppuration. It is only after repeated removal and cautery of the granulations and their consequent flourishing recurrences that suspicion is aroused which prompts the microscopic examination that discloses the malignant nature of

the process. As the growth becomes larger the entire cavity is filled with a neoplastic mass, which by pressure atrophy erodes the surrounding structures. The aqueduct of Fallopius is early invaded and the ensuing facial paralysis is a characteristic feature of the disease. The involvement of the nerves and the pronounced pain that accompanies this adds to the misery of the affliction. The labyrinth may be invaded with typical symptoms of labyrinthitis that rapidly go on to meningitis and death. The mastoid process is almost always invaded and the extension may involve the sinus and give rise to a sinus thrombosis. Extension upwards through the tegmen tympani and antri with meningitis and brain abscess formation is also observed. The cervical glands are early affected and a characteristic preauricular infiltration with secondary involvement of the temporo-mandibular joint is seen in a large majority of cases reported. In almost all cases in which a microscopic examination was made the growth proved to be of the squamous cell type and highly malignant. Radical mastoid operation as well as radiotherapy with the x-ray and radium have all proven futile. Death as a rule is usually caused by meningitis, brain abscess, sinus thrombosis or hemorrhage.

#### CONCLUSIONS

1. Primary carcinoma of the tympano-mastoid is a decidedly rare condition.
2. It is seen most frequently following a long continued otorrhea.
3. Clinically, the repeated appearance of granulations after removal, in case of otorrhea occurring in the "cancer age," especially when accompanied by non-traumatic facial palsy, and glandular infiltration should arouse suspicion of malignancy and a portion of the tissue should be excised for microscopic examination.
4. Treatment by radical excision and by radiotherapy is apparently hopeless and death is caused most frequently by meningitis, brain abscess, sinus thrombosis and hemorrhage.

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## RINGWORM OF THE SCALP IN ADULTS (REPORT OF TWO CASES)

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Ringworm of the scalp is a rather common disease of children, but it is very rare in adults, especially in the United States. Pusey<sup>1</sup> states that its occurrence is excessively rare after adolescence. Ormsby<sup>2</sup> quotes Hyde in saying that ringworm in the scalp of the adult or aged is indeed among the rarest of cutaneous accidents. Sutton<sup>3</sup> says that adults are so rarely attacked that the probability of such a contingency may safely be ignored. Such is the tenor of opinion among the other American dermatological textbooks. The changes which occur to render the scalp so immune to ringworms invasion after the onset of adolescence are unknown.

Fox and Fowlkes<sup>4</sup> in 1925 reported three cases proven microscopically and culturally. From the world's literature, they tabulated 53 (including their own) bona fide cases i. e. proven by laboratory methods. At the time of their report, they were only able to find four other cases recorded in the United States. Since their comprehensive review of the subject, there have been four more proven cases recorded in this country by Fox,<sup>5</sup> Chambers,<sup>6</sup> Bechet,<sup>7</sup> and Andrews.<sup>8</sup> This makes a sum total of eleven reported adult cases in the United States where the diagnosis was confirmed by laboratory methods.

Two additional cases are herewith briefly reported, viz:

Case I. A male, aged 26, Arabian by birth, laborer, single, was admitted to the Buffalo City Hospital for an abdominal complaint which later investigation proved to be tuberculosis of the duodenum. In a complete physical examination, numerous small scaling areas with some alopecia were observed in the scalp and a crumbling heaped up condition of all the nails (fingers and toes) noted. When first seen, the clinical diagnosis of ringworm of the scalp and nails was made. Because of the rarity of scalp ringworm in adults, steps were immediately taken to confirm the diagnosis by laboratory methods. Dr. A. G. Foord found many hyphae in the 40 per cent. potassium hydroxide preparations of the scalp hair and nails; the hyphae of the former were outside the hair proper so grossly were considered a Trichophyton of the Ectothrix group. Positive cultures (Sabouraud's media) were obtained



from the scalp but the implantations from the nails failed to grow. Dr. Fred D. Weidman of the University of Pennsylvania identified the positive fungus cultures from the scalp hair to be *Trichophyton pedis* of Ota.

Treatment of the scalp infection with a two per cent. sulphur and two per cent. salicylic acid ointment proved highly successful. Renewed interest in the local medicinal treatment of ringworm of scalp, especially the microsporon infections of children, has been stimulated by Lieberthal's<sup>9</sup> recent work. Various types of therapy to the nails proved of no avail, possibly due to lack of cooperation of the patient and his disappearance from observation before the methods had been given a thorough trial.

Case 2. A farmer boy of 16 was observed who had a large scaling and crusting area in the right occipital region with some loss of hair. It was about three inches in diameter and had been present for several weeks. The patient stated that some of the cattle on his father's farm had what they had considered ringworm. A *Trichophyton* of Ectothrix variety was found on microscopical examination; cultures never grew. As the boy presented all the usual characteristics of having attained puberty, it was considered an adult scalp ringworm infection. Epilation by x-ray of the area and the surrounding zones eventually cured the condition.

#### SUMMARY

Two cases of ringworm of scalp in adults are reported; one was proven both microscopically and culturally and the other, by direct potassium hydrate preparations.

All suspicious cases of ringworm in the scalp of adults should be confirmed by laboratory methods; such infections may not be as rare as pictured.

104 South Michigan Avenue.

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#### NO CHRISTMAS PRESENT

A young colored girl was trying to sound out her gentlemen friend concerning Christmas gifts. "Rufus," he said finally, "what does I git on Christmas this year?"

"Shet yo' eyes, Honey," ordered Rufus.

The girl obeyed, "Deys shet," she said.

"What does yo' see, Honey?" asked Rufus.

"I sees nothin'," she replied.

"Dat's whut youse goin' to git," he told her.

When ignorance isn't bliss, 'tis folly to serve hash.

### Society Proceedings

#### CHRISTIAN COUNTY

On Thursday evening, July 18, the Christian County Medical Society held its semi-annual meeting at the country club of Taylorville and a good time for all the twenty-seven doctors who were there was in store for them.

First, a fine chicken dinner was served at seven o'clock and then followed a good program in which Dr. J. A. Ikemire of the Ikemire Clinic of Palestine, Ill., was the speaker of the evening. His address was on "The Relations of the Internal Secretions." The address was enjoyed greatly by all and brought out a good deal of discussion and practically no disagreement.

We had with us several physicians from Springfield and Decatur who took part in the discussion.

Dr. Andy Hall, director of the State Department of Public Health, reviewed his work and suggested reforms he would wish to have made.

Dr. McShane of the department of Epidemiology also gave a brief address.

Dr. Munson and others from Springfield enjoyed our meeting and the four physicians from Decatur were loud in the praise of the good time we had. Adjourned about 11:30 to meet again at our annual Thanksgiving day when we invite our wives and allow those who have not a wife to bring their sweetheart—or sister.

#### Marriages

WALTER C. BURKET, Evanston, Ill., to Miss Gail Brook of Stronghurst, June 22.

JUDSON I. DOSS to Miss Artie Bolin, both of Milton, Ill., June 7.

GORDON W. ELRICK, Chicago, to Miss Sadie S. Boettner of Elizabeth, Ill., June 14.

MARK GREER to Miss Oris Camille Klasing, both of Vandalia, Ill., at New York, June 14.

ADOLPH C. MIDTHUN, Chicago, to Miss Ailene Gilmore of Arrowsmith, Ill., in June.

## Personals

Dr. Otto F. Kampmeier has been appointed head of the department of anatomy of the University of Illinois College of Medicine to succeed the late Prof. Victor E. Emmel.

Dr. Wilber E. Post has been elected president of the Chicago Society of Internal Medicine for the ensuing year, and Dr. John P. O'Neil president of the Chicago Urological Society.

Dr. Zoia Tschoumacova, recently of Chicago and formerly in practice in San Francisco, has accepted a position on the medical staff of the Northern Colony and Training School at Chipewewa Falls, Wis.

Dr. William A. Claxton has resigned as health officer of Morgan County, and superintendent of the Oak Lawn Sanatorium, Jacksonville, and will engage in practice in Indianapolis.

Dr. Stewart B. Sniffen, psychiatrist at the Mental Hygiene Clinic at the University of Maryland Hospital, has resigned to become clinical professor of psychiatry and a member of the staff of the health service at the University of Chicago, September 1.

Dr. Robert A. Black, professor of pediatrics, Loyola University of Medicine, will have charge of the new \$300,000 La Rabida Sanatorium in Jackson Park, which will soon be under construction. The sanatorium will care for children who have heart disease.

Dr. C. St. Clair Drake, a former secretary and executive officer of the state department of health, and recently field director of the American Public Health Association, has been appointed by Governor Emmerson as managing officer of the Jacksonville State Hospital.

The dean of Stanford University School of Medicine, San Francisco, announces that Dr. Ralph B. Seem, medical director of the Billings Memorial Hospital of the University of Chicago, has been appointed superintendent of hospitals and professor of hospital administration, effective September 1, to succeed the late Dr. Richard G. Brodrick.

Dr. Charles L. Mix has resigned as professor and head of the department of medicine, Loyola University School of Medicine, and has been appointed professor emeritus. Dr. Mix, it is reported, plans to retire from both teaching and

practice and to devote his time to writing and study. His successor on the medical faculty will be Dr. Italo F. Volini, new clinical professor of medicine.

It is reported that Dr. Numa P. G. Adams, Chicago, has been elected dean of Howard University School of Medicine, Washington, D. C., to succeed Dr. Edward A. Balloch. Dr. Adams is a graduate of Howard University and of Rush Medical College. He served an internship at the City Hospital, St. Louis, and has been a member of the staff and director of the heart clinic at the Provident Hospital in Chicago.

Dr. Sandor Horwitz, health commissioner of Peoria, was guest of honor of the Physicians Fellowship Club of that city before his recent departure for a European trip. Dr. John F. Sloan will be acting commissioner of health during his absence in Europe.

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## News Notes

—The merger of the Acme-International X-Ray Company of Chicago and the Engeln Electric Company of Cleveland, to be known as the American X-Ray Corporation, has just been announced, to be effective July 1.

Leonard A. Busby, president of the Chicago City Railways, was elected president of the Corporation; H. P. Engeln, first vice-president in charge of sales; Frank L. Severance, vice-president and general manager, and Montford Morrison, vice-president and chief engineer.

—The 108th Medical Regiment, 33rd Division, under command of Colonel James J. McKinley, leaves for Camp Grant, Rockford, Ill., August 3, on its annual tour of duty. The regiment is made up of the Division Surgeon's Staff, Regimental Headquarters, two ambulance companies, one hospital company and a service company.

The following members of the Chicago Medical Society and Chicago Dental Society are its officers: Lt. Col. M. L. Blatt, Maj. Louis Cowan, Maj. Joseph Stettauer, Maj. Philip Bedessem, Capt. M. Kemper, Capt. Leslie B. Crumrine, Capt. R. E. Johnson, Capt. M. W. Caveny, Capt. P. F. Grimm. In addition, Lt. W. G. Elwits acts as a Divisional Veterinarian. The following are the Medical Administration officers: Capt. H. H. Baum, Capt. R. J. Thomas, Capt. R. E.



Gleason, Capt. A. A. Bolotin, Capt. C. W. Stevens, Lt. J. J. Abbott.

The following officers of the Reserve Corps will be attached to the regiment for duty: Col. Hugh Scott, Maj. D. N. Campbell, Lt. G. J. Lengrich, Lt. C. B. Meldrum, Lt. R. Horlock, Capt. P. F. Grimm.

—Judge Friend in circuit court, July 19, dismissed the case against Henry J. Schireson, who was being sued for malpractice by a patient who lost her limbs following an operation performed originally for bow legs. The attorneys in the case announced that a settlement had been made. Schireson is to pay the victim a total of \$40,000 at the rate of \$1,000 a month, following an initial payment of \$11,000.

—The Cook County Board voted, July 17, to establish a cancer clinic at the county hospital and appointed Dr. William A. Hendricks to be in charge. It is planned to place all cancer patients in the hospital in two wards where they will be cared for and studied by the director and representatives of Chicago's four class A medical schools in cooperation with the hospital staff. Dr. Hendricks, the *Chicago Tribune* says, will receive \$4,000 a year for his part-time services as director. The clinic will open August 1.

—The Illinois Elks Association has completed plans to carry on a permanent orthopedic program in behalf of the crippled children of Illinois. The state health department says that a survey to determine where the crippled children are will be made. Clinics will be organized at which the patients and the family and physicians may meet with specialists for diagnosis and advice. Dr. Henry B. Thomas, professor of orthopedic surgery, University of Illinois College of Medicine, is to head this service. The plan is to work in close cooperation with the medical societies concerned.

—A Chicago physician, en route to the bedside of a seriously ill patient, was stopped, July 5, by a policeman at Crawford Avenue and Lake Street, and detained about twenty-five minutes, the *Chicago Tribune* says, for alleged violation of the speed laws. The physician finally demanded a ticket in order to hurry on. The next day he sent the policeman an invitation to the patient's funeral. The judge fined the defendant

\$25 and costs, saying that his policy was not to exempt physicians from the speed laws no matter what their errands were.

—Loyola University School of Medicine announces the following appointments: Dr. Louis D. Moorhead, dean of the school of medicine, has been made professor and head of the department of surgery to succeed Dr. Edward L. Moorhead, deceased; Drs. Milton M. Portis and Sidney A. Portis have been elected clinical professors of medicine; Dr. William J. Corcoran, clinical professor of pediatrics; Dr. Ralph C. Sullivan, clinical professor of surgery, and Dr. Bernard Portis, associate professor of surgery.

—The diagnostic laboratory of the state department of health celebrated its twenty-fifth anniversary, June 26. The Sangamon County Medical Society participated, Dr. Andy Hall, state health officer, presiding. Dr. William A. Evans, former health commissioner of Chicago, gave a public address and an address before the medical society. The state laboratory began in 1904 with one part-time technician and in the first year its work was practically confined to examinations for tubercle bacilli. Today the laboratory has several branches employing over a hundred people, who do more than 250,000 tests annually relating to a dozen diseases, and, in addition, undertake research.

—The Chicago School of Sanitary Instruction, whose bulletin is edited by the city health commissioner, devotes a recent issue to noise as a menace to health. Tests made on normal subjects, it is said, showed that 19 per cent. more energy was required to perform certain duties in noisy locations than was required to perform them in quiet locations. Noise that is not sufficient to wake a sleeping person will cause his muscles to remain tense as long as thirty minutes. Sleep under such conditions is not refreshing. Sanitary engineers have made tests in Chicago by means of the audiometer, an instrument which determines the volume of noise in any locality on a percentage basis. The continuous sound or community noise which they found in various localities varied from 8 to 10 per cent. in the country to 15 per cent. in the suburbs: from 25 per cent. in residential districts to 35 per cent. in industrial districts, and up to 40 per cent. in the loop. The increase in

noise in Chicago is further shown by the fact that it has become necessary for the fire and police departments to use sirens, while five years ago they used gongs. Noise is now a serious problem. Several hospitals are considering moving to quieter areas, and the number of protests received by city authorities against noises is increasing each year. The Chicago School of Sanitary Instruction is conducting studies with a view of presenting details to the legislature for the enactment of laws which will aid in controlling unnecessary noise.

—A coroner's jury of physicians and scientists concluded, July 1, that the death of Mrs. Violet Clark on the previous Saturday was caused by inhaling methyl chloride gas which came from an artificial refrigerator used in her apartment. The jury came to its conclusion after careful consideration of the fact that thousands of such refrigerators have been installed throughout the country and that they operate with apparent slight mortality. They also came to this decision against opposition from some officials of the artificial refrigerator industry. The jury recommended that steps be taken to prevent further sickness and death from such causes. It was found that there was a definite leak in the refrigerator and that an abundance of methyl chloride gas was present in the Clark apartment. The coroner's chemist, Dr. Ralph Webster, stated that he examined the body of Mrs. Clark and found positive evidence that her death was caused by the gas. Dr. Webster also said that the death of guinea-pigs which had been placed in the Clark apartment was due to the gas. The city health officer and other physicians believe that some other cases of illness and death in recent months have been due to a similar cause. The coroner's jury comprised Drs. Morris Fishbein, editor of the *Journal*, A. M. A., foreman; H. Gideon Wells, professor and chairman of the department of pathology, University of Chicago; Emery R. Hayhurst, professor of hygiene at Ohio State University College of Medicine; Richard H. Jaffe, director of the laboratory, Cook County Hospital, and Profs. Fred C. Koch, Ph.D., of the department of physiologic chemistry, and Morris S. Kharasch, Ph.D., of the chemistry department of the University of Chicago.

The chaplain of the Regiment is Capt. John A. Decker.

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## Deaths

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WALTER ELMER BOURQUE, Chicago; Chicago College of Medicine and Surgery, 1915; aged 42; died, June 20, of epistaxis and chronic nephritis.

DEMETRIO CAMODECA, Chicago; University of Naples, Italy, 1881; aged 70; died, June 18, of arteriosclerosis and chronic nephritis.

ADOLPH H. CHRISTENSEN, Chicago; Bennett Medical College, Chicago, 1902; member of Illinois State Medical Society; aged 58; died at Norwegian-American hospital, July 6, from arteriosclerosis and acute myocardial degeneration.

FRANK DUNHAM, Robinson, Ill.; Rush Medical College, Chicago, 1887; aged 66; died, June 26, at the Robinson Hospital, following an operation for carcinoma of the sigmoid.

PAULINE ROSE KAPSA, Chicago; University of Illinois College of Medicine, Chicago, 1909; a Fellow, A. M. A.; member of staff Chicago Lying-In Hospital; aged 42; died at Belmont Hospital, July 2, of bronchopneumonia.

FREDERICK LENARTSON, Springfield, Ill.; Bennett Medical College, Chicago, 1909; aged 46; died, June 30, of septicemia, following the incision of a perinephritic abscess.

LEE PERCY MEHLIG, Evanston, Ill.; Rush Medical College, Chicago, 1919; on the staffs of the Martha Washington and Burrows hospitals, Chicago; aged 39; died, July 2, at the Augustana Hospital, Chicago, of septicemia incurred while doing surgical work.

GIUSEPPI MONACO, Oak Park, Ill.; University of Naples, Italy, 1898; formerly on the staff of the Mother Cabrini Hospital, Chicago; aged 58; died, May 30, at the University Hospital, Chicago, of lobar pneumonia.

OSCAR JAY PRICE, Chicago; University of Michigan Medical School, Ann Arbor, 1866; member of the Illinois State Medical Society; Civil War veteran; aged 84; died, July 5, of angina pectoris, arteriosclerosis and chronic nephritis.

MEREDITH D. PUGH, Lincoln, Ill.; Chicago Homeopathic Medical College, 1901; aged 53; died, July 1, at Deaconess Hospital.

FRANK DARLINGTON RATHBUN, New Windsor; Rush Medical College, Chicago, 1877; Jefferson Medical College, Philadelphia, 1878; aged 75; died at his home, July 1, after a long illness. He was the son of a physician and his two sons have carried on his practice since his retirement in 1914.

ALFRED K. SMITH, Chicago (licensed, Illinois, 1887); aged 86; died, June 23, of bronchial asthma and endocarditis.





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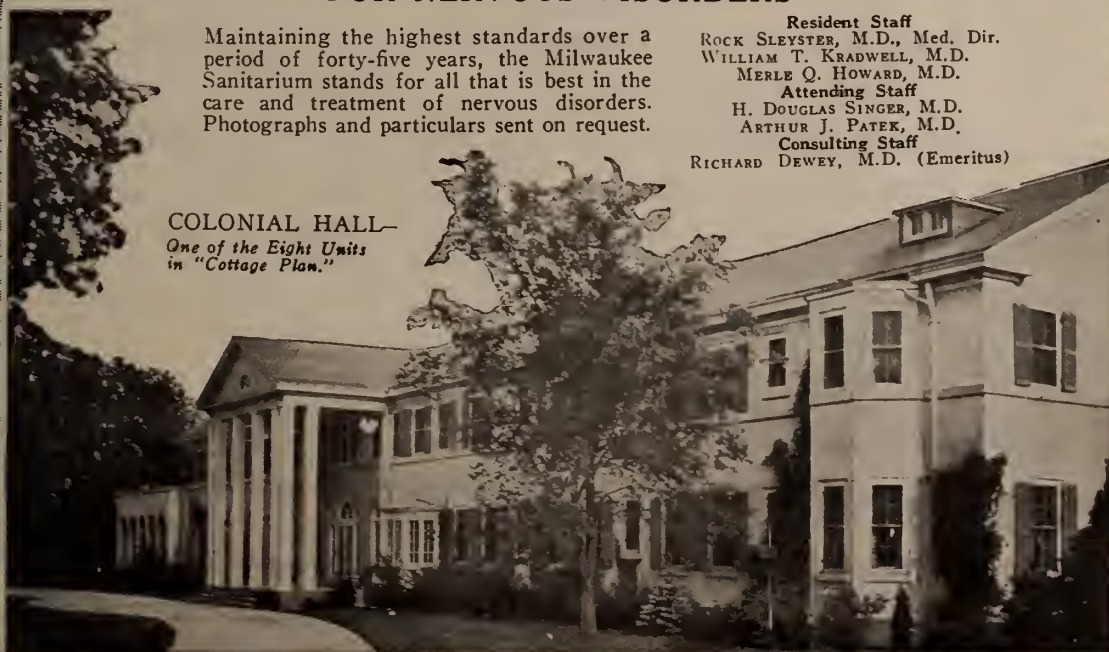
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# ILLINOIS MEDICAL JOURNAL

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## Editorial

### BILLIONS OF DOLLARS DONATED TO PHILANTHROPY IN THE YEAR 1928. MEDICAL PROFESSION SHOULD EDUCATE PHILANTHROPICALLY INCLINED LAYMEN AS TO THE BEST WAY TO DISTRIBUTE WEALTH ALONG THE WAYS OF MEDICAL CHARITY

Donations to philanthropy during the year 1928 ran into billions according to a compilation published in the *Literary Digest*.

In recent years philanthropists have multiplied in number, so, consequently have endowed institutions, intended to be of vast public service by their founders, men of great wealth who have wished to disburse their holdings in the ways of beneficence, but in many instances these disbursements and the institutions they maintain have defeated their own ends, through an improper perspective upon the conditions affected.

Of such nature are endowed institutions and those supported by public taxation that enter into competition with recognized and ethical medical practice, since by virtue of its inherent freedom from any financial burden, such competition must necessarily be both unfair and detrimental. Unfair because the ethical medical profession and its practitioners are not endowed and such endowed and expense-free competition lays a double economic burden upon the medical profession. Detrimental because the rapid increase of such philanthropy must act as a deterrent upon the resupply of the medical profession for the next generation.

How to make use of endowments offered for public medical service so that these endowments shall live up to the intents of the donors by improving medical service and extending its quantity and quality and at the same time function so as not to effect deterioration upon men-

bers of the ethical medical profession has engendered a great perplexity in medical circles. Much deliberation must ensue before the method is arrived at as how to distribute to the best advantage billions of dollars offered for medical endowment. The problem must be solved by the medical profession, and while it is a difficult problem, it is not impossible.

From doctors in an organized capacity, suggestions should be given to the philanthropically inclined among the country's men and women of wealth, as to the most efficient ways in which to distribute wealth along the ways of medical charity.

For the keynote of success in this direction lies in the immediate and thorough education of philanthropists as to the actual situation in the practice of medicine, taking into account all ethical, moral, scientific and economic angles. Only by this process of education and elimination can the necessary result be achieved.

Unfortunately one of the weeds in the banner crop of altruistic intentions towards one's fellow-men lies in the gigantic growth of socialistic ideas and ideals, springing from the tremendously augmented sums of money devoted to social service enterprises and the consequent introduction, necessary from a standpoint of efficiency, of salaried social workers. Unless some check is made to this tendency, the whole scheme of capitalistic philanthropy will be "hoist by its own petard" and like the man with the seven devils the last state of the house will be worse than the first. Unless checked without delay, the country will find itself with almost surprising suddenness, well on the way to an ultimate social state, involving the destruction of those fundamental principles that have made the United States the outstanding democracy of civilization, and the advance of medical science in that democracy one of the salient factors in world progress. Viewed in the light of this unexaggerated prospect, if socialistic ideas are allowed to run riot, then instead of a beneficence, philanthropy on the loose may well be considered a national menace.

Nor will the fault lie with the philanthropists. They are probably doing the best they can with their money in the light of their limited knowledge of medical ethics and medical economics.

The trite old story of the newly made rich

man who wandered into an epicurean hotel and wildly ordered "Ten thousand dollars worth of ham and eggs," because he knew of no other delicacy, nor of any other way to spend some of his millions, is applicable to the philanthropist who donates his wealth to what he thinks is the highest type of human service. With the knowledge at his command the philanthropist is doing the very best he can. Instead of criticism what he needs is enlightenment. The hour is here and it is speeding by for the organized medical profession to step out, as an organization and inform citizens with wealth to distribute and the itch for such distribution, exactly how the money can be turned into the coffers of medical philanthropy so as to insure the greatest good to the public and the continuance of this same medical expertness in the United States that is the envy of every well informed statistician and scientist anywhere in the world. The problem is not one to be solved over night. It is even more than the tariff and the prohibition question, a problem of direct import to every citizen in the United States, and because of American leadership to every citizen in the world.

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### PAY THE MIDDLE-CLASS ITS JUST WAGES AND THE MIDDLE-CLASS WILL PAY ITS BILLS

LET BIG BUSINESS TAKE A JUST PERCENTAGE  
OF THE PROFITS THE MIDDLE-CLASS EARNS DAY  
BY DAY FOR BIG BUSINESS AND PUT THESE  
PROFITS INTO THE PAY ENVELOPES OF THE MID-  
DLE-CLASS RATHER THAN INTO HUGE PHILAN-  
THROPIC MACHINES THAT AFTER ALL ARE ONLY  
VAIN MONUMENTS TO THE MEN WHO BACK  
BIG BUSINESS

THE RULING PASSION STRONG IN CHARITY  
A GOOD BUSINESS HEAD HAS TO BARTER WITH  
PROFIT FOR ITS OWN POCKET-BOOK  
EVEN WHEN SEEMINGLY ALTRU-  
ISTICALLY INCLINED  
TO BUY A GOLDEN CUSHION FOR A BROKEN  
ANKLE INSTEAD OF TRYING TO CURE  
THE BREAK APPEARS FALLACIOUS

Anybody who tries to break himself of an ingrained habit ponders perforce on the sentiment of Lord Byron's famous "Prisoner of Chillon",—"My very chains and I grow friends." Some habits and traits are so unbroken an heritage



in many families that their presence is accepted with the same degree of tolerance as that with which communities at large condone or rejoice in either unpleasant or charming racial traits. This too, in the face of the fact that such inclinations often wreak havoc on the community itself.

Tendencies to dissipation, thieving, immorality or on the other hand, bravery, integrity and highmindedness, become in certain groups as pronounced indices as the white skin of the Caucasian, the blunt nose of the Ethiopian, or the Mongolian attitude towards worry. These trends include the shrewdness of the keen merchant or "big business" man; the charity of the religious, the honor of the medical profession and the courage of the good soldier, all of which work to make this world a better place to live in.

Quite in line with the shrewdness and self-exploitation that have made "Big Business" what it is comes the plainly apparent desire of this occupational group to hide its structural defects and excuse its inherent predatoriness by the simple expedient of following the exhortation of trying to "Assume a virtue if thou hast it not."

In other words, Big Business having glutted itself into prosperity at the expense of that most pitiable sector of civilization, the white-collar or middle-class, shrinks at taking the gaff for its misdeeds in this direction. Instead of the reparation due the middle class, a reparation that would put these modern peons of industry on their merited level of adequate wage compensation, Big Business side-steps the issue and proffers as a substitute a semi-sugar coated form of charity. It is to be noted that this so-called reparation does not take the form of a year's supply of stylish hats, shoes, seal skin coats, roadsters, oriental rugs or grade-A milk to the middle class and its families but is to be doled out at the expense of another class of workers, the medical profession. No matter where you find Big Business on the job, Big Business is always on its elemental job of making the other fellow stand the loss and of making a profit out of somebody. Right there is to be found the keynote of all this medical charity nonsense by which Big Business is trying to hide its own cloven hoof, or to soothe an awakened conscience.

Big Business has become suddenly very much worried over the fact that some of its "small-salaried but valuable men" can't afford to pay for that illness that on occasion is inevitable to all humanity and for which the most expensive care is now available to the very rich because they can afford to pay for expert service and for the very poor because they do not have to pay for it, since expert care for the poor is now paid for by the very rich in order to maintain a mammoth philanthropic bureaucracy that gives to the vanity of the very rich almost as much kick as the nervous system gets out of a shot of moonshine gin. All very wonderful in its way, and about as beneficial. All this running around Robin Hood's barn to "do something about the troubles of the poor dear middle class" *instead of instituting such conditions as would ultimately make the poverty of this middle class a thing of the past by gradual absorption into the ranks of the adequately financed.*

In other words, why not raise the salary of the middle-class? Why not give this class a chance to keep its self-respect, spend its own money, and pay its own bills, instead of keeping its nose to the grindstone to earn more money for the other man to spend as he wishes? Here is a side of the question that Big Business has never been able to see. Having built up a machine that takes away the earnings of another class the limited perspective of Big Business permits it to see no way out but to build up another machine to spend these earnings. The joker in the situation, that ultimately will have Big Business hoist by its own petard, is that Big Business, inherently the bitter enemy of socialization is right now laying the foundation of the socialization and undoing of the world's most permanent and successful democracy. It is very hard for a tyrant to let loose his reins of power. History has shown that when tyrants hold too long and pull too strong, the reins snap and the tyrant gets a hard fall head over heels. It will be a lasting crime against humanity if the grasping vanity of a predatory group is permitted to undo what millions of men and women have suffered, fought and died to uphold.

All the millions that Big Business gives in charity or civic uplift have not come from the inorganic things of earth but from the exploitation of these inorganic things and elements

through the human element—a human element that for the most part has been paid in husks for the winnowing of the grain. And to try to make reparation by handing out a silken cushion to sit in while the chaff chokes the throat and sticks in the nostrils is about the ultimate word in assininity. If a man breaks an ankle, he needs that ankle set and cared for so that it will ultimately be once again well and strong. What he decidedly does not need is a cushion of gold on which to place his broken ankle while he looks at the break and the man who owns the cushion bought with profits on the labor of the man with the broken ankle, stands around and says exultantly, "Too bad, old man, you've been hurt so badly. Never mind. Look at the solid gold cushion you can have to rest it on. That's MY cushion." No, what that man wants is his own good foot, not the other fellow's fine cushion.

The foot will never be well under those circumstances; nor will the "troubles" of the middle class ever achieve even palliation until remedial measures that are actually remedial are applied. Big Business must put into its pocket, all its vanity, its parsimony, its deep-seated love of money, and passion for material gain that in accurate analysis stands revealed as the motivating element of the art of trade and commerce, and come out into the open, with its worship of a sharp bargain laid aside. Life is not a horse trade. Big Business can no longer be conducted on the basis of Indian barter. Men of the same race cannot with impunity buy rare furs for a handful of beads, when dealing with each other. If the truth be known the gist of all this wonderful newly proposed medical charity is not generosity towards any class, but an expansion of trade in the direction of another. Instead of giving the middle class free medical care, Big Business is out to see that this free medical care is scientifically milked out of the medical profession. Not reciprocity but even higher taxation and from new and hitherto undrained fields is what Big Business is about to get.

The medical profession is about to be a commodity of Big Business. This will be a certain result if the philanthropic machine succeeds. Already annually the medical profession as a group donates to charity over forty per cent. of its legitimate earnings.

No small part of this donation goes to families of the middle class, who though the service for these families is not on a basis of out-and-out charity at the same time it should be so designated as these inadequately paid, and hence inadequately nourished people, either fail to pay their bills at all, or take so much time at the task that there ensues a loss of interest and money use, that while a doctor never pays any attention to it at all would drive any business man to despair.

If the doctor or the economist is asked for his ideas as to what should be done about medical charity or any other charity for the "Middle-class" the answer if true would be terse. For what is the answer? Simply for Big Business to take a just percentage of the profits the middle-class earns day by day for Big Business and put these profits into the pay envelopes of the middle-class rather than into huge philanthropic or educational machines that after all are vast monuments to the vanity of the men who back big business.

Pay the middle-class its just wages and the middle-class will pay its bills.

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## SEVEN YEARS OF ACCIDENTS KILL MORE AND MORE

Dr. Andy Hall, Director of Public Health, State of Illinois, says:

Seven years of peace have killed more Illinoisans than the world war did.

Three times as many males are killed as females. Man is man's enemy.

"Accidental deaths in Illinois," Dr. Hall said, "have jumped from 4,803 in 1922 to 5,950 in 1928, a rise of nearly 24 per cent. The total dead from accidents for the period is 38,532.

"Bad as it is, the automobile is responsible for less than one-half of all accidental deaths. Accidental falls caused 961 deaths; railroad accidents, 662; burns, 416; drownings, 383; breathing poisonous gas, 241; eating poisonous food or medicine, 131. These and various other miscellaneous mishaps pile up the startling total of 4,205 accidental deaths, against 1,745 charged against the automobile directly.

"Males get the worst end of the bargain all the way through where violent deaths from any



reason are concerned. Accidents killed 4,359 males against 1,468 females.

"Suicide is almost altogether a masculine means of demise. Last year in Illinois 953 men and boys took their own lives, while only 174 females committed suicide.

"With murder the situation is almost the same. Out of 783 persons who died through the homicidal action of fellow beings, 652 were male and only 131 female. Of the total 504 occurred in Chicago.

"Accidents occur because people are out of tune with their environment. A surprisingly large number of children are killed in their homes because poisonous drugs are left within their reach. Indeed, accidental poisoning, burning, falling, firing of guns and pistols, drowning and coming into contact with machines, cause more deaths among children less than 15 years old than do auto mishaps. Nearly all of these accidents, except the drownings, occur in homes.

"Any significant advancement toward accident prevention will depend very largely upon a better adjustment of man to his environment. This will include not only more rigid traffic regulations and more refined traffic courtesy but a far more acute mental alertness in respect to potential accidents in the home and workshop."

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#### GEORGIA HAS CREATED A PERMANENT HISTORIAN FOR THE STATE MEDICAL SOCIETY

##### THIS IS THE PROPER PERSPECTIVE ON PRESERVATION OF MEDICAL ANNALS

Georgia has created a permanent historian for the state medical society. This is a marked step forward. The happenings and professional events of importance will be recorded each year; details of these events will be fresh in the memory of the historian and can be accurately set down without loss of color; the report of the historian can be recorded annually in the archives and this report can also be presented at the annual meeting of the state society for discussion and approval, just as is done with reports from other committee. At intervals of ten years or at other stated times these reports can be taken out and put into volume form for convenience.

History is the record of today's details and as life is history in the making, so history is life

that has been made. Down in Georgia the Medical Association of the state has the right idea about the necessity of recognizing the importance of history.

Upon the recommendation of Dr. Frank Boland, Dr. E. C. Thrash, chairman of the subcommittee appointed by the general committee to compile a medical history for the medical association of Georgia, states, a department of archives of Medical History of Georgia has been established and Dr. J. C. Weaver has been appointed historian. The advantage of having a permanent department of this nature in charge of a permanent appointee is far too obvious to call for further comment. Any one who has ever attempted to compile, collect or obtain data subsequent to the immediate moment of an occurrence, realizes what the department will mean to the medical profession of the state. Detailed comment upon the action appeared in the *Journal of the Medical Association of Georgia*, under date of August, 1929.

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#### ADAMS COUNTY SOCIETY

##### BIG ALL-DAY MEDICAL MEETING QUINCY, ILLINOIS

Monday, October 14, 1929

The 4th Annual All-Day Fall Clinical Meeting of the Adams County Medical Society will be held at Quincy, Illinois on Monday, October 14. This meeting is one of the largest one-day programs of any county medical society in the Middle West. The speakers who have been secured are sure to attract a big attendance. The program is an all-Philadelphia one and will be given by the faculties of the University of Pennsylvania School of Medicine and the Graduate School of Medicine of the University of Pennsylvania.

Among those who will give papers or clinics are:

E. L. Eliason, M.D., F.A.C.S., Prof. of Clinical Surgery.

E. B. Piper, M.D., F.A.C.S., Prof. of Obstetrics.

Gabriel Tucker, M.D., Asst. Prof. of Bronchoscopy and Esophagoscopy.

I. S. Ravdin, M.D., Asst. Prof. of Surgical Research.

W. Estell Lee, M.D., F.A.C.S., Prof. of Surgery.

R. H. Ivy, M.D., F.A.C.S., Prof. of Maxillo-Facial Surgery.

B. R. Beltran, M.D., F.A.C.S., Asst. Prof. of Surgery.

William Bates, M.D., F.A.C.S., Asst. Prof. of Surgery.

T. Turner Thomas, M.D., F.A.C.S., Assoc. Prof. of Applied Anatomy.

J. A. McGlinn, M.D., F.A.C.S., Assoc. Prof. of Gynecology.

The names of these men from the faculty of Amercia's oldest medical school should guarantee a successful meeting. A detailed program may be secured from the Secretary of the Adams County Medical Society, Dr. Harold Swanberg, 211-224 W. C. U. Building, Quincy, Illinois. All ethical physicians are cordially invited to attend.

#### RADIOLOGICAL SOCIETY OF NORTH AMERICA

The Radiological Society of North America will hold its Fifteenth Annual Meeting Dec. 2-6, 1929, in Toronto at the Royal York Hotel. Scientific sessions and clinics will occupy the five-day meeting and scientific exhibits such as have added interest to former meetings will be displayed in the fine manner for which the Society's committee in charge of this matter have distinguished themselves. The meeting place is a huge new hotel, distinguished for its roominess and luxurious appointments. Most moderate rates have been secured for those who reserve their rooms in advance, and a rate of one and one-half railroad fare on the certificate plan is available. Those who attended the Society's meeting last year in Chicago will recall the enthusiasm which marks these annual events for radiologists and clinicians and surgeons, who watch with interest the development of this specialty.

#### THE AMERICAN BOARD OF OTOLARYNGOLOGY

An examination was held in Portland, Oregon, July 8, during the meeting of the American Medical Association. Thirty-seven applicants appeared for examination, with 11% failures.

The next examination will be given on Monday, October 21, in Philadelphia, preceding the opening of the meeting of the American Academy of Ophthalmology and Otolaryngology in Atlantic City.

Prospective candidates for certificates should address the Secretary, Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha, Nebraska, for proper application blanks.

DR. W. P. WHERRY,  
Secretary

DR. H. P. MOSHER,  
President

#### AN AVERAGE GENERAL HOSPITAL

The American Hospital Association has received, among others, the reports of 676 general hospitals for the year 1928. These have been averaged by the statistician, showing a composite picture of a general hospital containing 181 beds, serving 3,353 patients a year, having a percentage of occupancy of 63.73 and operating at an average cost per patient-day of \$5.32. Its annual operating receipts of \$207,339.13 would be 92.37 per cent. of its annual operating disbursements. The average length of stay per patient in this hospital would be 12.56 days, and its average receipt from each patient would be \$61.83.—*Federation Bulletin*.

#### THE TEN COMMANDMENTS OF CANCER\*

1. Do not cut across a cancer and leave part behind. The part remaining will grow more rapidly than if you had left it alone, altogether.

2. An operation for cancer is an operation to save life. Cosmetic results are to be considered, but they are not to be weighed against recurrence and death a few years later.

3. Never manipulate a cancer roughly either before or during operation or more often than is necessary to make a diagnosis. To do so is the easiest way to drive cells into the lymph or blood current—hence metastasis.

4. Do not let a woman drag you into her delusion that her early cancer symptoms are due to the menopause. The menopause is a normal physiological state, and if the woman's organs are healthy she will be healthy.

5. Repair every cervix that is eroded, everted or the seat of a discharge.

6. Do not rule out cancer because the patient is not old. About 10 per cent. of cancers occur before thirty-eight.

7. Do not tell your patients they have cancer if you are sure they will follow your advice at once. If they are inclined to delay, tell them frankly what they have and what will be the consequence of delay. If they make their own choice, let it be done with full knowledge of facts and prospects. Tell the relatives or friends in any event.

8. To save your patients from cancer save them from delay. Do not wait for pain and cachexia—the signs of impending death.

9. Do not admit that incurable cancer is unrelievable cancer. Ligation, cautery, palliative removal, electrocoagulation, irradiation, and other proven physical methods may change distress to comfort and add months or years. The patient who appeals to you for relief is the one to be considered—not reputation or "the effect on the community."

10. Be always on the watch for early suspicious symptoms. Be prompt to follow them to a definite diagnosis. Be courageous enough to insist on immediate proper treatment.

\*From the Weekly Rooster and Medical Digest (Philadelphia County Medical Society), June 29, 1929.



## Original Articles

### MEDICAL DIATHERMY IN UROLOGY— ANALYSIS OF END RESULTS DURING SEVEN YEARS

VINCENT J. O'CONOR, M. D.

CHICAGO

In order to form proper evaluation of any given therapeutic measure several requirements are essential. First, a thorough study of the various modes of applying the remedy must be undertaken to rightly determine the most efficient manner of usage and when it is advisable to utilize it. This implies more than a cursory or "rubber stamp" method of investigation.

Secondly, sufficient clinical material must be studied and treated to form a basis for drawing conclusions as to indications and contraindications. And again, from time to time an honest appraisal of end results must be made.

Something over seven years ago I became interested in the application of diathermy in the treatment of genito-urinary diseases. This interest originated in the work of my associate, Dr. B. C. Corbus, and the therapeutic possibilities which he believed control of induced heat would add to existing methods of treatment. The conclusions drawn in this discussion arise from our combined work and most of the more valuable innovations during this course of study have been originated by him.

It is not my intention, even if time permitted, to tell the story of our various experimental studies in utilizing diathermy. It involves machines and electrodes and encouragement and discouragement. I do not purpose to go into the theories of high frequency currents or to discuss theoretical considerations. I merely intend to state what results we have obtained during this period of seven years.

The only claim that diathermy has for a therapeutic rationale is the effect which controlled heat induction can have upon disease processes and tissue repair. Beyond this, it is obvious, it has no value as a curative measure. Furthermore, it can only be considered as an adjunct to other methods of known therapeutic value in urology. Unfortunately any method which depends upon electrical apparatus, or kindred equipment for its application, immediately subjects it to the extravagant claims of commercial

salesmen and too often appeals to the type of medical mind which welcomes blind or stereotyped modes of therapeutic application. The wholesale distribution of diathermy machines, many of which are in the hands of men who have done nothing more than scan the "sales" literature, bears evidence to the frequent irrationality of its usage.

The mechanism for obtaining good results in the application of medical diathermy in genito-urinary diseases depends on: A. A satisfactory high frequency machine. B. The method of conveying the heat radiation (active and inactive electrode), which should be properly designed and adjusted. C. The time of application of heat radiation, that is, any reasonable limit of not less than twenty-five minutes, which may extend as long as sixty minutes, controlled in so near as possible by thermometer readings or experience in individual tolerance. These are merely the technical considerations.

#### MEDICAL DIATHERMY AS AN ADJUNCT IN THE TREATMENT OF GONORRHEA IN THE MALE

*Acute anterior urethritis.*—There is at present, in our own experience, no satisfactory method for treating infections of the male urethra with diathermy. Occasionally a most gratifying result is obtained, but the percentage of success in our hands has been so small that it has not justified the time or energy expended.

*Periurethritis.*—We have treated some fifty-five patients with periurethral infiltration which occurred in conjunction with gonorrheal urethritis. In none of these had suppuration taken place before diathermy was started. Urethral treatment was stopped and by means of through and through diathermy the infected area was subjected to one or two hours heat induction a day. Hot applications and hot soaks were advised in conjunction with the above. In over fifty per cent. of these individuals the infected follicles soon became soft and established drainage through the urethral lumen. In the more persistent cases, where suppuration did not occur, prolonged diathermy over a period of ten days or two weeks gave similar results. In six a periurethral suppuration occurred, the abscess was incised and drained and after several days through and through diathermy was continued. We feel that in this class of cases, diathermy is a very great aid in avoiding a larger number

of periurethral abscesses, in shortening the course of periurethral inflammation and preventing an otherwise greater number of urethral fistulae. It also allows a more rapid and safe return to urethral medication.

In the minute retention abscesses of suppurating urethral glands not extensive enough to be designated as periurethral inflammation, the so-called "folliculitis," through and through diathermy has been most expedient in establishing free drainage of these obstructed glands into the urethra. Often only one or two periods of one hour will suffice to soften up a nidus of gonococci which might otherwise persist for several weeks.

Whenever possible we apply through and through diathermy in all instances after free drainage of a periurethral abscess has been accomplished. Here again it is our experience that tissue resolution is greatly hastened and the possibility of urethral fistula thereby lessened.

*Stricture of the male urethra.*—Progressive urethral dilatation is the only successful method of treating urethral stricture and while diathermy is theoretically of great value in hastening the dilatation of the more dense scars, here again we have found but a scant use for this method. At the present time we rarely find it expedient to use electrodes within the urethral lumen for this purpose. We do not feel that this is one of the important fields of usefulness for this method.

*Aberrant urethral glands harboring the gonococcus.*—A frequently overlooked focus for the continuance of gonorrheal urethritis is infection of aberrant urethral glands. These anomalous structures are most commonly situated in close proximity to the urethral meatus although occasionally they are found low down on the ventral surface of the penis and in rare instances, as remote as the penoscrotal junction. When present and infected, they are often the cause of otherwise unexplained recurrences or abnormally prolonged activity of the gonococcus. These are easily destroyed by the fine wire active electrode introduced to their depths so that complete coagulation of the epithelial structures results.

*Gonorrheal prostatitis, prostatic abscess and seminal vesiculitis.*—There is rarely an indication for the use of diathermy in the usual case of prostatitis. While diathermy has been an aid to us in some instances of chronic prostatitis the

method offers little advantage over the associated treatment that is accepted as standard by most urologists. Removal of foci of infection, proper stripping and massage and appropriate urethral treatment are not greatly aided by infusion of heat in the prostate. We believe the reason for this lies in the fact that sufficient stimulant to normal drainage is usually accomplished without additional measures.

In the instance where drainage has become markedly interfered with and prostatic abscess is impending, we have found the application of rectal diathermy of the greatest value. Here the prolonged induction of heat into the gland exercises a sedative effect that seems to promote absorption and hasten natural drainage in a rapid and gratifying manner. Of seventeen recorded instances of early prostatic abscess, or "impending" abscess, thirteen subsided rapidly after rectal diathermy (two to four days), two more slowly (eight to ten days), one ruptured rectally and healed without complication, and one necessitated surgical drainage. In these as well as cases of acute seminal vesiculitis all are given rectal psychrophores for home treatment as well. Our experience leads us to feel that diathermy is a valuable aid in these conditions.

*Epididymitis.*—In gonorrheal epididymitis we find the greatest and most consistently valuable use of medical diathermy. It is our experience that if we can see an individual during the first twenty-four hours of the affection, we can promptly abort the usual severe course of symptoms in over ninety per cent. of the cases. Successful results depend upon early treatment, proper and prolonged (at least sixty minutes) scrotal diathermy, elevation of the testes and the usual rational behavior on the part of the patient. Several treatments on successive days may be necessary. In something less than ten per cent. of these cases, diathermy does not exert the usual rapid and resolving effect and these patients have to either undergo the usual week or ten days rest in bed with the usual measures or epididymotomy may be necessary. Our only explanation for the failure in these cases is that they may have a predominating secondary infection accompanying the gonococcus which does not respond so readily to the thermic influence. In so-called "non-specific" epididymitis our results have been more variable. In something less than fifty per cent.



the relief is rapid and the duration of the infiltration greatly lessened. In the remainder there is no markedly appreciable effect.

These conclusions are based on the treatment of slightly less than two hundred and fifty cases in the past seven years. Epididymotomy was found necessary in twelve.

*Gonorrheal arthritis.*—Arthritis of gonorrheal origin is very markedly benefited by through and through diathermy of the inflamed joint. In recent years we have referred these patients in the main to competent physiotherapists for this treatment as it necessitates considerable time and care. The foci are, of course, treated in the usual manner.

#### GONORRHEA IN WOMEN

*Gonorrheal urethritis.*—It is well known that under ordinary methods of treatment the gonococci do not persist in the urethral mucosa for prolonged periods, unless there is coexistent infection of the paraurethral glands. However, their more rapid disappearance after diathermy has been constant and the absence of subsequent paraurethral infection tends to the conclusion that the urethral application is most valuable for preventing this complication. In ninety-one instances of acute gonorrhea in the female where no evidence of paraurethral infection existed at the time, only three developed this complication later on. It is rarely necessary to treat the urethra more than three times when one hour urethral diathermy is given in conjunction with other treatment.

*Gonorrheal endocervicitis.*—Two hundred and fifteen women have been treated prior to May, 1927, by endocervical diathermy. Thirty-eight have had additional cauterization of cervical glands and follicles. Of this number, eighty-five have been checked for more than three years and forty-two for more than two years. The remainder were not seen after the cessation of active treatment and were not available for observation after the three month period following the application of their discharge technic.

The application of endocervical diathermy in order to obtain these results must be accurately and carefully controlled and wherever areas of infection are present that do not come in direct contact with the radiation areas, these should be cauterized by surgical diathermy or the actual cautery.

*Infection of Skene's or Bartholin's glands.*—Eradication of these foci is most important. The paraurethral glands are most satisfactorily treated by diathermic coagulation into the urethral lumen. Bartholin gland infections may occasionally be successfully treated by through and through diathermy or deep electrocoagulation with a needle electrode. In the majority of instances drainage and later excision of the gland, is most satisfactory. Any acute inflammation of the uterine adnexa contraindicates all intracervical treatment, as does likewise pregnancy, and the very early acute stages of the disease.

*Gonorrheal salpingitis.*—In the acute stages of tubal infection with pelvic pain, elevation of temperature and leukocytosis, it is generally agreed that palliative treatment is advisable unless gross suppuration occurs. Through and through diathermy has been a very valuable additional palliative measure at this time. The clinical course of the disease requires careful consideration and the effects of the treatment should be distinctly beneficial. Any increase in pelvic pain or immediate elevation of more than one degree of temperature is regarded as a contraindication for further diathermy at this time. If drainage is taking place from the tubes through the cervix, the results of diathermy should be favorable and clinically in our experience greatly shortens the duration of the disease.

*Chronic cavernositis and plastic induration of the penis.*—Fibrosis of Buck's fascia variously described as chronic cavernositis, plastic induration of the penis and fibrosis of the corpora cavernosa, is one of the most difficult conditions which the urologist is called upon to relieve. During the past seven years we have treated five cases of this nature with diathermy. These patients complain of pain in the penis, accentuated during erection, bowing or crookedness of the penis when erect, and varying degrees of urethral obstruction. Constantly repeated local infusions of heat into the fibrotic area is the only treatment up-to-date which has given any measure of success in our hands. The response to diathermy is very slow, but if persisted in will give definitely beneficial results. The treatment entails hourly treatments at frequent intervals over a period of time occupying from three months to a year.

In one instance in which treatment lasted for

almost eighteen months there was complete relief of symptoms and about fifty per cent, reduction in size of the fibrotic area. In another instance, where bowing of the penis during erection was the chief complaint, complete relief was afforded after three months of diathermy treatments given for one hour, three times each week. The size of the fibrotic mass was not diminished, although it was considerably softened in texture and has so remained for over two years. In the third instance, painful urination was relieved after twelve treatments, although urethral dilatation may have been the really beneficial therapeutic agent in effecting this, since the sclerosis was neither diminished in size or in texture.

In the other two individuals no relief was obtained after seven and ten treatments respectively. Both of these patients had a definite lime salt deposit, as shown by x-ray, although we felt that the period of treatment was inadequate to expect appreciable result.

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#### THE PREVENTION OF NEO-NATAL MORTALITY FROM THE STANDPOINT OF THE OBSTETRICIAN

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At present, as nearly as can be known, about twenty thousand women die annually in the United States from causes incident to pregnancy and labor. It is estimated that the loss of infant life is nearly 120,000. Eighty-five per cent. of the maternal mortality is preventable, that is, if all women were confined in well organized maternities under experienced obstetric care, the great majority of obstetric deaths would not occur. It is impossible to say how many women, in addition to those who die, are left in a condition of greater or less invalidism as a result of birth injury or infection, nor can we know how many infants, besides the number who are lost, begin life hampered by the results of birth trauma. It is difficult to make any dogmatic statement as to the number of infant deaths and injuries which may be **prevented**, since statistics upon which such an estimate must be founded are impossible to get. It is probable, however, that more than half of the infant deaths might be avoided and probably at least as large a proportion of the injuries.

The necessity of lessening this loss of life and this toll of injury has engaged the attention of national societies and of the American Medical Association, and committees have been appointed to study the matter.

From the viewpoint of the obstetrician, the remedy is easily stated. The average quality of obstetric work in the country must be improved. This is easily said, but its accomplishment will require consistent effort for a long time. So long as the majority of deliveries are in the hands of men in general practice this will be difficult to remedy completely. Most men in family practice find their primary interests to lie in other fields, and obstetric cases are taken of necessity rather than from choice.

Prevention of infant mortality so far as the obstetrician can influence it depends upon the care given the mother during pregnancy and during labor. The tremendous importance of pre-natal care of the mother is being emphasized at present more strongly than ever before. As our discussion tonight centers 'round the infant, all phases of pre-natal care will be omitted except those which directly concern the infant after the period of viability.

One of the most essential things from this standpoint is an exact knowledge of the pelvic diameters. A seaman who attempts to enter a harbor without knowing the depth of water in the channel would be regarded as careless or incompetent, but the fatal bark is too often started on its parturitional voyage without its obstetric pilot having troubled to ascertain whether reefs and sand bars in the form of pelvic deformities lie before it. The result is a dead or injured baby. The knowledge that a contracted pelvis is present enables the physician to so conduct the labor that in the majority of cases the infant may be saved.

Toxemia and its sequence, eclampsia, is one of the three great causes of maternal death. Severe toxemia and eclampsia increase definitely the risk which the child undergoes. These conditions are to a considerable degree preventable. The prevention of serious toxemia calls for constant and regular observation during pregnancy. This observation may be done by any practitioner of ordinary intelligence, and nothing but the equipment of the simplest office laboratory is required. The timely recognition of on-



coming eclampsia enables the physician to institute measures for the control of the toxemia or for the termination of the pregnancy before both mother and child are seriously endangered.

That the simple measures for the recognition of both the foregoing complications are frequently omitted is known to every active obstetrician, particularly if he is in contact with hospital work. Many fetal deaths annually are the inevitable result.

The incidence of syphilis in pregnancy varies greatly with the source from which one takes one's figures. In the private practice of the specialist it occurs infrequently but is not unknown. In dispensary practice it is more frequent. Williams in 1920 in a series of 4,000 cases found a positive Wassermann in 11.2 per cent. The Johns Hopkins service contains a large proportion of colored patients, and among these the Wassermann was positive in 16.29 per cent. Figures from the almost entirely white service of the University of Michigan clinic and from the Long Island College Hospital show about 6 per cent. of positive Wassermann reactions in both places. It is therefore always to be reckoned with and is more frequently found in dispensary and hospital ward service than privately. Without discussing all of the points brought out by Williams, he was able to show that energetic treatment of the syphilitic pregnant woman reduces very greatly the number of children born syphilitic. If the treatment of these potentially infected children is begun in utero the subsequent task of the pediatrician is materially lightened. There is no reason why such treatment cannot be given during pregnancy. Even if no opportunity for giving treatment is had until late in pregnancy, the child is benefited and its resistance to colds, bronchitis and so on which may be acquired soon after birth is increased. It is wiser for the obstetrician to delegate the management of anti-syphilitic treatment to someone of experience in this work, and this is the plan always followed in our own work. Congenital syphilis forms a considerable proportion of the inmates of our asylums for the feeble-minded, jails and correctional institutions. It is of immense practical importance to diminish the number of these individuals, and the obstetrician has the first chance. It is clearly shown by Williams' figures that energetic pre-natal

anti-syphilitic treatment will aid greatly in lessening the number of syphilitic infants. Here we find one of the opportunities for the obstetrician to decrease neo-natal morbidity and mortality.

The conduct of labor has an important bearing on infant mortality and morbidity. Inability to recognize impediments to the normal course of labor caused by the bony pelvis and by abnormalities of the soft parts, and lack of knowledge of how to deal with them are responsible for many deaths. Each year I see, as does every physician who sees a large number of obstetric cases, women in whom a history of long labor followed by difficult forceps or version followed by delivery of a dead or moribund baby, is obtained. At one time in the past year, in addition to the cases seen otherwise, five private patients were under observation at one time with such histories. In four of them a diagnosis of contracted pelvis could be made by the usual simple methods within five minutes. All of them were delivered safely of living children. All of them could have been so delivered the first time had they been in any well organized and competently directed maternity. The five infant lives were a sacrifice to deficient obstetric knowledge. Contracted pelves cause a large number of infant deaths. Yet in the hands of experienced obstetricians, who take care always to know in advance with what bony diameters they have to deal, the infant mortality is low. For example, in Bailey's report in 1926 from the Bellevue Hospital of the treatment of 477 cases of contracted pelvis seen in that institution in the years 1922 to 1925, the infant mortality was 4.19 per cent. This is an excellent showing. That this can be done elsewhere is shown by the recent report of Lynch from the University of California Clinic, in which in a similar series of cases comparable results were obtained. This simply means that good obstetrics bring results for the baby as well as for the mother.

During the past year there were delivered in the Evanston Hospital 837 women. To indicate what may be accomplished in a general hospital in the limitation of fetal loss of life, I will give the figures for infant mortality. The total number of fetal deaths was 32, a percentage of 3.8 per cent. Of these 22 were premature, that is, less than eight months, many of them being

much earlier. Of deaths which might be termed avoidable, that is, infants which were alive at the beginning of labor and which were lost during or shortly after labor there were 7, a percentage of 0.83 per cent. There were 22 unavoidable deaths, due either to prematurity or some congenital defect, such as congenital heart defect or anencephalus. Of the seven deaths we term avoidable, one was a case of placenta praecia at 8 months delivered by version, one was a twin birth, the infants weighing about  $3\frac{1}{4}$  pounds apiece, one was a traumatic cerebral hemorrhage and four are recorded as cause unknown, but probably cerebral hemorrhage. Autopsy in these four cases was refused.

In the private work of myself and my associate, Dr. C. E. Galloway, for the past three years 1,083 women have been delivered. All of these deliveries occurred in the hospital. Of these cases 130 terminated before the seventh month. In pregnancies advanced to seven months or beyond before delivery occurred there were 27 deaths. In 13 of these stillbirths occurred, 8 being premature and 6 at term. Fourteen deaths after delivery occurred, eight being premature and six at term.

Of obstetrical deaths at term, that is, deaths which may be charged to the labor, there were six, or 0.55 per cent. Including all deaths which may be termed unavoidable there were 15 or 1.38 per cent. These were due to some congenital defect which made life impossible. The total deaths at nine months from all causes came to 1.2 per cent.

The women who made up this series all received constant and painstaking pre-natal observation and they were all delivered according to best obstetric teaching. These results are not spoken of as being extraordinary, for experienced workers in similar institutions obtain results which are just as good. They are quoted for the purpose of showing that careful pre-natal observation followed by intelligent, painstaking and conservative treatment during labor brings definite results which are as apparent in the infant mortality and morbidity as in the maternal.

In contrast with this, the writer recently heard quoted the results of a small hospital in this state in which the number of cases for the year was about equal to one month's work in our service, in which the fatal mortality was 10 per cent. It is

probable, too, that in this latter institution the physicians did the best they knew. That an urgent need exists for the improvement of the average quality of obstetric work cannot be doubted. A tremendous necessity exists for a more widely spread knowledge among physicians of the necessity of pre-natal care and for a better understanding of labor and its management.

During the past few years various phases of operative obstetrics have been discussed and different methods of terminating labor have been suggested. The results obtained by the expert in the organized maternity have tempted many with little experience and deficient surgical surroundings to attempt procedures for which they were ill qualified. The result can only be an increase of both maternal and infant mortality and morbidity. The importance of intelligent expectancy practiced by a doctor who has been properly taught the normal mechanism of labor should be emphasized. As Bumm has said, "they are poor obstetricians who cannot await the safe processes of nature."

The misuse of pituitrin has cost numbers of infant lives. The giving of pituitrin to the undelivered woman under any but the most carefully selected circumstances is blameworthy and may subject both mother and child to danger. It is not uncommon for it to be used in doses of one-half centimeter or of one centimeter in the cases of women with partially dilated cervixes or in cases in which a slight disproportion requires time for the moulding of the fetal head. This practice can only be condemned as it adds materially to the danger of both mother and child. The great cause of death of infants in these unwise operative procedures and in the indiscreet use of pituitrin is hemorrhage of the brain and into the spinal canal. The so-called asphyxia of the newborn child is usually one or both of these. This is commonly recognized by obstetricians and it is important that it should be widely known by the profession at large. A clear understanding of this fact will help to cause the physician to approach operative procedures with circumspection and will aid in reducing the number of fetal deaths from this cause. If a clear understanding of the indications for forceps and a definite knowledge of the proper method of using this instrument were possessed by every practitioner who does ob-



stetrics many injuries and a considerable number of infant deaths would be prevented.

For the best results in the care of newly born infants co-operation between the obstetrician and pediatrician is essential. There is no reason why the same man may not do pediatrics and obstetrics, provided he is able to give his patients efficient service in both branches. Unfortunately but few men can do this. Pediatrics is a medical specialty while obstetrics and gynecology is a surgical one. With the rapid growth of medical knowledge it taxes the powers of even an industrious man to keep properly abreast of all advances in one department of medicine, particularly if he is carrying on a large practice. How one individual can do really good work in two fields as dissimilar as these it is difficult to see. I have for years been convinced that efficient work in both fields by one man is impossible. It is difficult to serve two masters. One will be a good obstetrician and an indifferent pediatrician or the reverse. In our own hospital all babies born in the ward service become pediatric patients immediately upon delivery. No member of our department is permitted to prescribe for them or treat them in any way except when resuscitation is necessary at the time of delivery. Private patients are asked within the first day or two whom they wish as pediatric attendant, and, if necessary, one is recommended.

We have had no difficulty in the matter with our patients, most of whom approve heartily of this plan. I am convinced that it is to the best interests of the infants, for they come at once under the observation of the physician whose primary interest they are. It is to the interest of the obstetric attendant, for it is easy for an obstetric success to be over-shadowed in the mind of the patient by a pediatric error.

I conclude, then, as I began. From the point of view of the obstetrician a reduction of infant mortality and morbidity is directly contingent upon an improvement in obstetric practice. The results attained by expert obstetricians, both for mother and child, and the comparison of such results with those obtained by less experienced and less fortunately situated men, prove this. More hospitals are needed not only in large centers but in smaller communities. And greater emphasis upon the essentials of obstetrics is vital.

In conclusion the obstetrician would emphasize the following points: 1. All women, in the interests of their babies as well as in their own, should receive conscientious pre-natal care.

2. A wider spread and much clearer understanding of fundamental obstetric problems by the profession generally will aid in lessening loss of infant life.

3. Whenever possible, that is in communities in which specialization of practice prevails, the infant after birth should be cared for by a pediatrician. A combination of pediatrics with obstetrics is illogical and can only lead to lack of efficiency in one or the other.

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#### ABNORMALITIES OF THE BILE DUCTS, AND THEIR BLOOD VESSELS AND THEIR SURGICAL SIGNIFICANCE\*

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Because of the frequency of operations on the gall-bladder and bile tracts and of the rather common injuries to the bile ducts and sometimes fatal hemorrhage encountered, a knowledge of the anomalies of the bile ducts and their vessels is desirable by all surgeons doing gall-bladder surgery. Variations are very frequent and the subject is of importance to surgeons as to the causes of such accidents and of their prevention in the future. Flint, of London, has made 200 dissections on postmortem subjects of the bile tract and its blood supply. He found only sixty-nine cases, or twenty-four per cent, which conformed to the type given as normal in the textbooks of anatomy.

The type described as normal in textbooks of anatomy consists in the union of the hepatic and cystic ducts at an acute angle with the hepatic artery passing below the common hepatic, and the cystic artery arising from the right hepatic just to the right of the common hepatic duct and entering the gall-bladder at the junction of its neck with the cystic duct. Covering the com-

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\*Read before Los Angeles County Medical Society, Ohio Valley Medical Society, Evansville, Ind., and Jackson Park Branch Chicago Medical Society.

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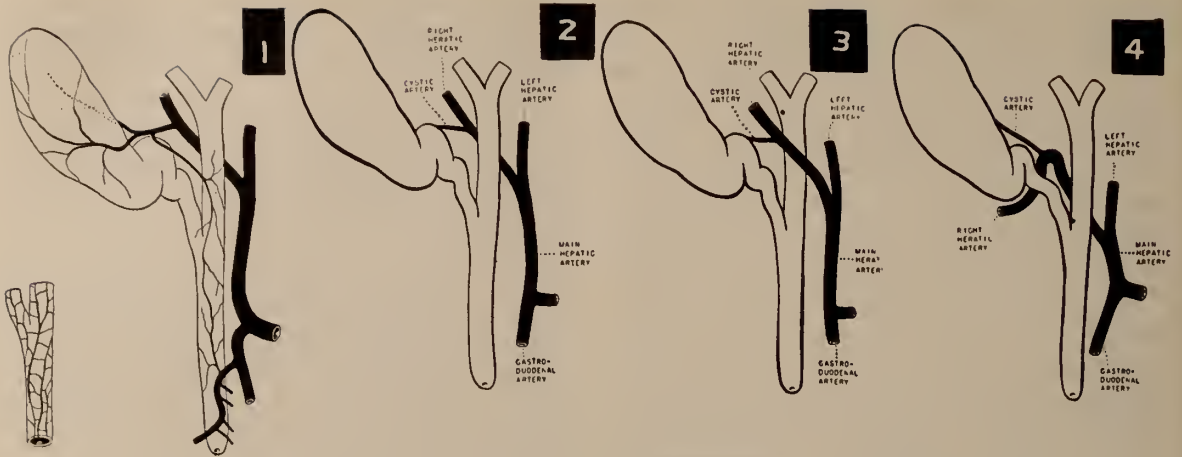


Fig. 1. The normal arrangement of the biliary ducts and gall-bladder with its blood supply.

Fig. 2. Right hepatic artery arising from the main hepatic trunk and passing behind the main hepatic duct.

Fig. 3. The right hepatic artery crossing in front of the main hepatic duct.

Fig. 4. Right hepatic artery running parallel to the cystic duct and lying in close proximity to the neck of the gall-bladder.

mon duct there is a plexus of veins and arterioles. (Fig. 1).

Our knowledge of the anomalies of the bile ducts and blood vessels is in great measure due to the work of Rio Branco, Des Comps, Ruge, Kunze, Eisendrath and Flint.

The most important vascular anomalies are the following:

1. *The Right Hepatic Artery.*—This artery varies greatly in its relations to the main hepatic and cystic ducts.

(a) In seventy per cent of cases it arises from

the main hepatic trunk and to reach the liver passes behind the common hepatic duct (Fig. 2).

(b) In twelve per cent of cases the right hepatic artery crosses the front of the hepatic duct or even the common duct (Fig. 3).

(c) In ten per cent. of cases the right hepatic artery may run parallel and very close to the cystic duct and the neck of the gall-bladder, almost suggesting a double cystic duct. It could be very easily included in the clamp applied to the cystic duct (Fig. 4). Figure 5 shows a specimen demonstrating a normal angular mode

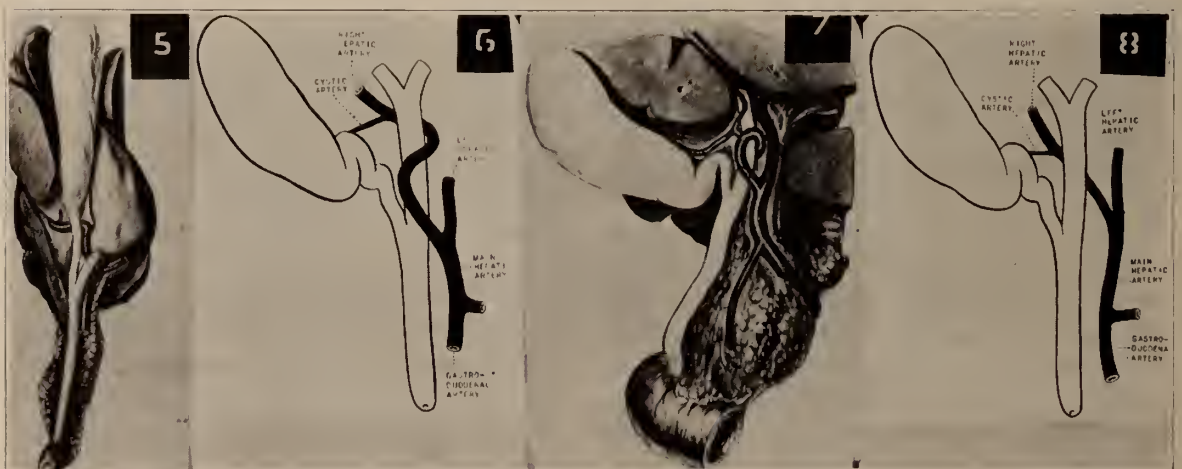


Fig. 5. Specimen demonstrating a normal angular mode of union of the cystic and hepatic ducts.

Fig. 6. Right hepatic artery arching over right edge of the main hepatic duct.

Fig. 7. Specimen showing how right hepatic artery forms a loop in front of the hepatic duct.

Fig. 8. Cystic artery arising from the right hepatic artery.



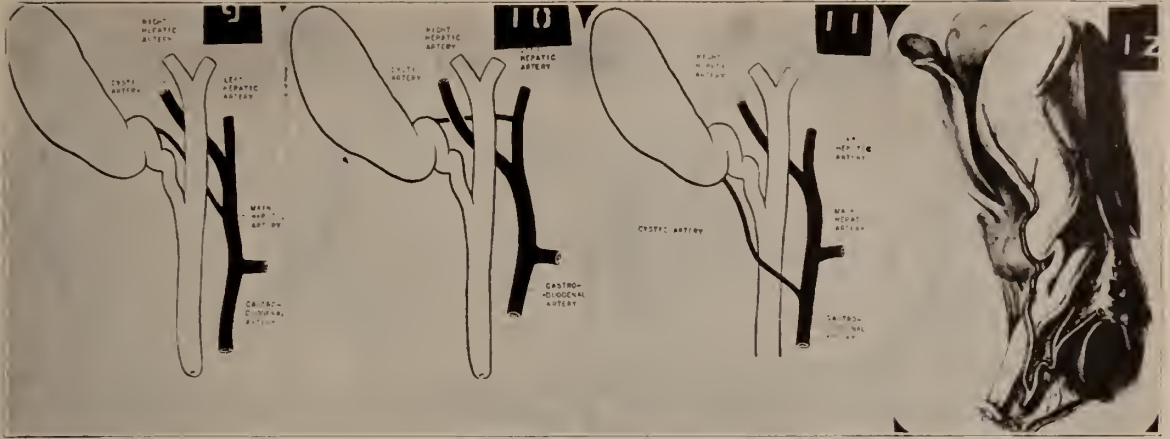


Fig. 9. Cystic artery arising from the main hepatic.

Fig. 10. Cystic artery arising from the left hepatic.

Fig. 11. Cystic artery arising from the gastro-duodenal artery.

Fig. 12. Specimen demonstrating the cystic artery arising from the gastro-duodenal artery and crossing the common duct obliquely to reach the lower side of the gall-bladder.

of union of the cystic and hepatic ducts. The main feature of the specimen is that the right hepatic artery is at first parallel to the cystic duct, then passes close to the neck of the gall-bladder, and enters the right lobe of the liver. This anomaly is of great importance in connection with possible injury of the artery during cholecystectomy.

(d) In eight per cent. the right hepatic artery crosses the right edge of the main hepatic duct and then enters the liver or forms a ring around the hepatic duct (Fig. 6). Figure 7 shows specimen demonstrating how right he-

patic artery forms a loop in front of the hepatic duct.

(e) In twenty-one per cent. of cases the right hepatic artery arises from the superior mesenteric artery and always passes behind the common duct.

(f) In three per cent. of cases there are two right hepatic arteries, one from the hepatic trunk and one from the superior mesenteric. Flint reports two cases in which two right hepatic arteries arise from the main hepatic, one passing in front of and the other behind the common hepatic duct.

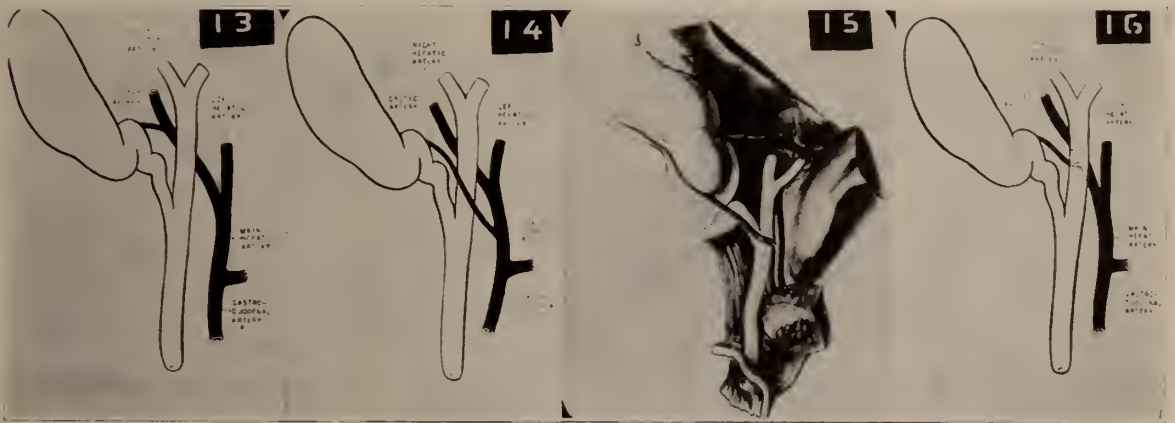


Fig. 13. Cystic artery arising to the right of the main hepatic duct.

Fig. 14. Cystic artery arising to the left side of the hepatic or common duct and must cross one of these to reach the neck of the gall-bladder.

Fig. 15. Specimen showing the cystic artery arising on the left side of the main hepatic duct and crossing the latter to reach the neck of the gall-bladder.

Fig. 16. Cystic artery arising behind the main hepatic duct.

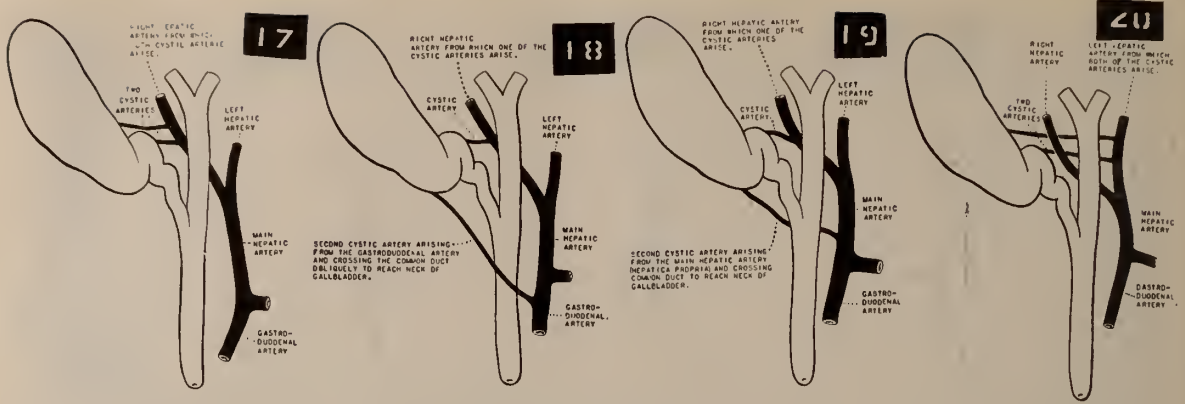


Fig. 17. Two cystic arteries arising from the right hepatic.

Fig. 18. One cystic artery arising from the right hepatic, and the other from the gastro-duodenal artery.

Fig. 19. Accessory cystic artery arising from the main hepatic.

Fig. 20. Two cystic arteries arising from the left hepatic.

## 2. The Cystic Artery.

### 1. Anomalies in origin of the single cystic artery.—

(a) There is only one cystic artery in eighty-eight per cent. of individuals. In eighty-two per cent. of these it arises from the right hepatic artery (Fig. 8).

(b) In three per cent. of the eighty-eight per cent. the cystic artery arises from the main hepatic (Fig. 9).

(c) In two per cent. of the eighty-eight per cent. the cystic artery arises from the left hepatic and may retract greatly when divided (Fig. 10).

(d) In three per cent. of the eighty-eight per cent. the cystic artery arises from the gastro-duodenal artery. This must cross the front of

the common duct to reach the neck of the gall-bladder and is a very important anomaly as far as the source of bleeding is concerned (Fig. 11). Figure 12 shows specimen demonstrating the cystic artery arising from the gastro-duodenal artery and crossing the common duct obliquely to reach the lower side of the gall-bladder.

### 2. Relation of the single cystic artery to the main hepatic duct.—

(a) In seventy-two per cent. of individuals the cystic artery arises to the right of the main hepatic duct (Fig. 13).

(b) In twenty-seven per cent. the cystic artery arises on the left side of the hepatic or common duct and must cross one of these to reach the neck of the gall-bladder (Fig. 14). Figure 15 shows specimen demonstrating the

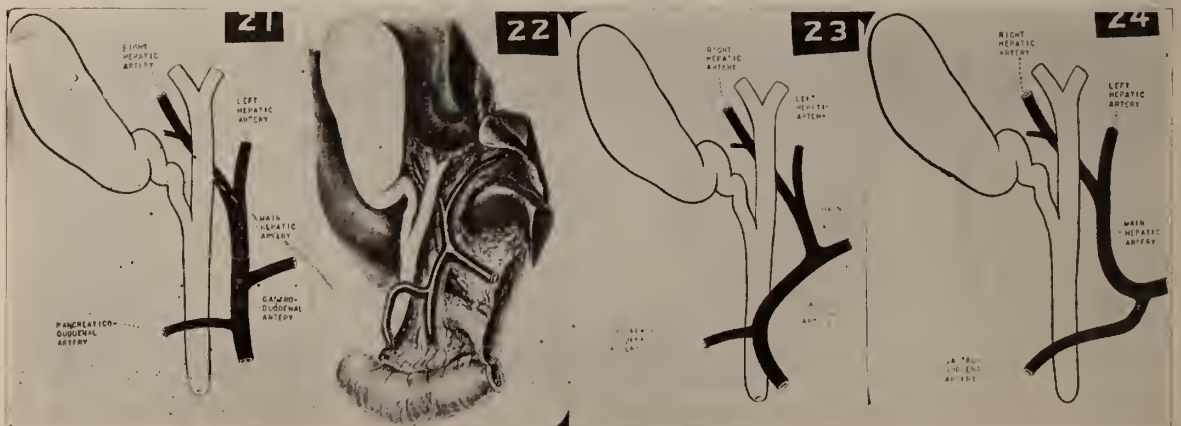


Fig. 21. Pancreatico-duodenal artery crossing the common duct.

Fig. 22. Specimen demonstrating pancreatico-duodenal artery crossing common duct.

Fig. 23. Gastro-duodenal artery reaching across the left border of the common duct.

Fig. 24. Gastro-duodenal artery passing across the front of the common duct.



cystic artery arising on the left side of the main hepatic duct and crossing the latter to reach the neck of the gall-bladder.

(c) In two per cent. the cystic artery arises behind the main hepatic duct and if it should retract, it is easy to include the duct in the grasp of the forceps. (Fig. 16.)

3. *Accessory Cystic Artery*.—In twelve per cent. of individuals there is an accessory cystic artery. Attention is not called to this in the anatomy books.

(a) In eight per cent. of cases having two cystic arteries, both vessels arise from the right hepatic artery. (Fig. 17.)

(b) In two per cent. one artery arises from the right hepatic artery and the other from the gastro-duodenal. (Fig. 18.)

(c) In one per cent. the accessory artery arises from the main hepatic. (Fig. 19.)

(d) In one per cent. both vessels arise from the left hepatic. (Fig. 20.)

In the instance where the accessory cystic artery arises from the gastro-duodenal, it is liable to injury during the operation of choledochotomy. Ignorance of the occurrence of the accessory cystic arteries may be responsible for rather severe hemorrhage.

4. *Gastro-Duodenal Artery*.—This is of importance in common duct operations.

(a) In seventy-six per cent. of individuals the pancreatico-duodenal artery, a branch of the gastro-duodenal, crosses the common duct (Fig. 21). Figure 22 shows specimen demonstrating the pancreatico-duodenal artery crossing the common duct.

(b) In thirty-eight per cent. the gastro-duodenal artery reaches across the left border of the common duct. (Fig. 23.)

(c) In twenty per cent. the gastro-duodenal artery itself passes across the front of the common duct. (Fig. 24.)

5. *The Bile Ducts*.—According to text-books on anatomy, the right and left hepatic ducts unite in the portal fissure or just beyond it to form the common hepatic duct. This structure is from one inch to one and one-quarter inches long. The cystic duct is from one inch to one and one-half inches long, and uniting with the common hepatic duct at an acute angle, they together form the common bile duct which is about

three inches long. The length of the supra-duodenal part of the common duct varies with the level of the duodenum, and the point at which the cystic and common hepatic ducts join, the average length of this part of the duct being held to be about one-third of the whole length of the common duct. Now, though it is true that the cystic and common hepatic ducts do come together at such a point as to give an average of length as stated, they do not unite here. Almost always they are nearly bound together by fibrous tissue and by dissection it is possible to separate them from each other to as much as two inches or more.

In only seventy-five per cent. of individuals do the cystic and hepatic ducts unite at an acute angle. (Figs. 25 and 26.) When this does occur, the terminal two centimeters are firmly held together by fibrous tissue. In seventeen per cent. the ducts pursue a parallel course before they unite. The latter is usually one-half to one centimeter above the ampula. In Figs. 27 and 28 the hepatic duct and cystic duct are bound together for five centimeters. Figures 29, 30 and 31 show a long parallel course of the cystic and hepatic ducts. The two become united close to the ampulla and are bound together by strands of fibrous tissue. In eight per cent. the cystic duct makes a spiral twist around the front (Fig. 32) or back (Fig. 33) of the main hepatic duct before they unite to form the common duct. Figure 34 shows a specimen demonstrating the anterior spiral mode of union of cystic and hepatic ducts. The cystic duct crosses the front of the main hepatic duct to enter its left side. In Figure 35 the specimen demonstrates the posterior spiral mode of union of cystic and hepatic ducts. Note how the cystic duct winds around the posterior aspect of the hepatic duct to enter on the left border of the latter. Figure 36 shows specimen demonstrating the anterior spiral mode of union of cystic and hepatic ducts. The cystic duct makes a turn of a quarter of a circle before uniting with the hepatic duct. Note the unusual length of the common duct.

6. *Accessory Bile Ducts*.—These were found in eighteen per cent. of individuals. All of them were accessory right hepatic ducts. The duct leaves the liver at the extreme right end of the portal fissure, and lying at first on a rather deeper plane than the cystic duct, joins the

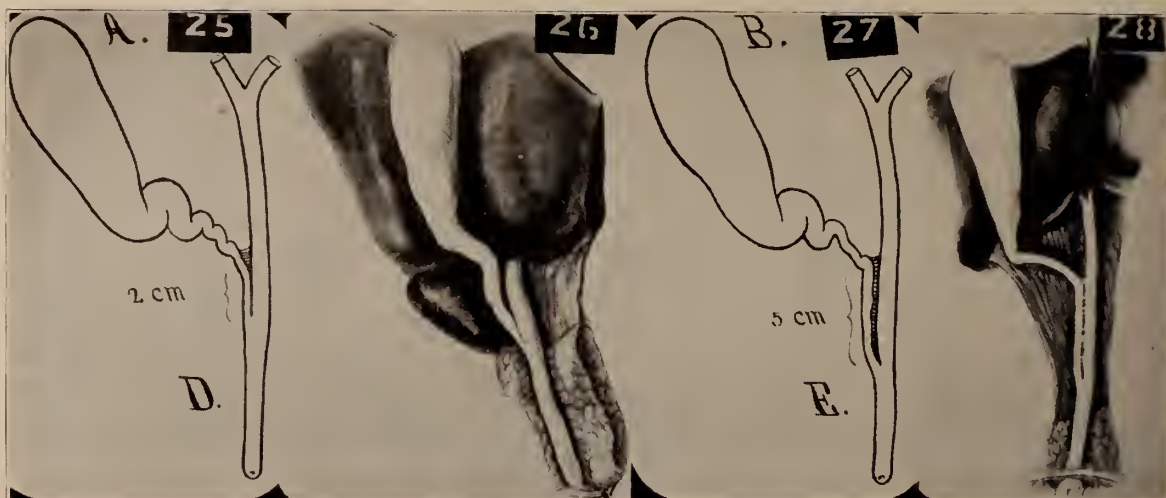


Fig. 25. Cystic and hepatic ducts uniting at an acute angle, showing the terminal two centimeters firmly held together by fibrous tissue.

Fig. 26. Specimen demonstrating cystic and hepatic duct uniting at an acute angle.

Fig. 27. Terminal portions of hepatic and cystic being bound together for five centimeters.

Fig. 28. Specimen demonstrating cystic and hepatic ducts bound together for five centimeters.

extra-hepatic ducts anywhere between the junction of the right and left hepatic ducts and the point at which the cystic duct opens into the main duct. It usually has the same relation to the right hepatic artery as the normal ducts, that is, the artery passes behind the duct. There is no reference in the anatomy books to an accessory duct.

These accessory ducts may be classified into

three types according to the level at which they enter the main duct. This is done from a surgical rather than from an anatomical standpoint:

1. The junction of the accessory duct with the right hepatic duct. In this type the union is so high up that the duct is unlikely to be of surgical importance.

2. The junction of the accessory duct with the common hepatic duct. The union is so near



Fig. 29. A long parallel course of the cystic and hepatic ducts which unite just above the ampulla.

Fig. 30. Specimen demonstrating a long parallel course of the cystic and hepatic ducts.

Fig. 31. Another specimen demonstrating a long parallel course of the cystic and hepatic ducts uniting just above the ampulla.

Fig. 32. Cystic duct making a spiral twist around the front of the hepatic duct before uniting to form the common duct.



that of the cystic and common hepatic ducts as to be definitely in the field of cholecystectomy operation.

3. The junction is at the union of the cystic and common hepatic ducts. The junction is usually in the actual angle but may be in the extreme lower end of the cystic duct or in the extreme lower end of the common hepatic duct. In any case it is difficult to see how the duct could be avoided while clamping the cystic duct, unless its presence had been previously detected. In Kehr's case two accessory hepatic ducts emptied into the gall-bladder.

The size of these accessory ducts varies. The smallest is only large enough to admit a good-sized bristle. The largest is as big as the right hepatic duct. The commonest size is about half-way between these limits. There is one other abnormality which is a curiosity rather than of practical interest and that is congenital obliteration of the bile ducts in the new-born.

#### THE SURGICAL SIGNIFICANCE OF THESE ABNORMALITIES

Practically all the accidents to the ducts and vessels occur during the operation of cholecystectomy with or without choledochotomy and since cholecystectomy has almost entirely displaced cholecystostomy it is obviously the duty of every surgeon to make himself familiar with the normal anatomy of these parts.

It is customary for several reasons to begin the removal of the gall-bladder at the cystic duct and it is here that all the traps lie. There is

only one way to avoid catastrophes, that is, to fix the neck of the gall-bladder with a clamp, and after cutting through the gastrohepatic ligament near this point to wipe gently the fatty tissue towards the common duct. The cystic duct and artery now come clearly into view and can be separately secured. If there should be an accessory artery or duct it will be exposed to view before being divided, and the junction of the cystic duct with the main duct can be seen distinctly. There are a few cases, however, in which the tissues are deformed, thickened, and contracted by inflammation so that it is not possible to obtain a really clear definition. It is in this type of case that the most expert surgeons have probably all had unhappy experiences.

Secondary operations on gall-bladder cases have to be performed much too often, for I venture to say that ninety-nine out of one hundred could be avoided by a proper definition of the parts at the original operation combined with a better knowledge of the pathology of the gall-bladder. The commonest blunders committed at the primary operation are:

1. Leaving the gall-bladder through an inadequate appreciation of its pathology.
2. Overlooking a stone in the cystic or common duct.
3. Injury to the cystic, common hepatic or common bile duct.
4. Injury to an accessory hepatic duct.

(1) The first group is beyond the scope of this paper.



Fig. 33. Cystic duct making a spiral twist around the back of the hepatic duct.

Fig. 34. Specimen showing anterior spiral mode of union of cystic and hepatic ducts.

Fig. 35. Specimen demonstrating spiral mode of union of cystic and hepatic ducts.

Fig. 36. Another specimen demonstrating the anterior spiral mode of union of cystic and hepatic ducts.

(2) In the second group, difficulty might arise through a spiral arrangement of the cystic duct referred to above. A stone in that part of the duct which lies behind or in front of the common duct might be missed, or to expose it the common duct might be opened unnecessarily. Anyone unacquainted with this anomaly would be much perplexed on finding that he had opened two ducts to get at a stone which he had expected to find in the common duct. A stone in the normally located cystic duct or in the common duct should never be overlooked after a proper exposure of the parts.

The abnormal arteries which may be encoun-

tered in opening the common duct have already been alluded to. The superior pancreaticoduodenal and gastroduodenal arteries may be wounded in the transduodenal method of opening the common duct, for either vessel may lie in front of the duct just above the ampulla of Vater.

(3) The injuries inflicted on the cystic, common hepatic or the common bile duct practically always occur for one reason, that of not seeing clearly the various structures before applying the clamp. There are four types of injury which may be classified as follows:

(a) A resection of the junction of the cystic, hepatic and common ducts. This often results from the angulation incident to traction during cholecystectomy, especially when a clamp is applied to the cystic duct. "A" of Fig. 37. The defect remaining after such an incision of the angle of junction of the three ducts is shown in "B" of Fig. 37.

(b) Tear, ligation, or division of the main hepatic duct during cholecystectomy. This injury may occur during separation of the pelvis (whether on the upper or lower side) of the gall-bladder, "A" and "B" of Fig. 38, from the common or hepatic ducts or when the cystic duct is very short, is much dilated, "A" and "B" of Fig. 39, or when the cystic and hepatic ducts are parallel, Fig. 40, or the cystic duct winds around the main hepatic duct, Fig. 41.

(c) Common duct resected. This may occur in one of the ways described under (a) and (b) or the duct may be included in a clamp, resected or divided during cholecystectomy or it may be torn during a choledochotomy.

(d) Main hepatic or common ducts ligated or resected during effort to grasp the bleeding stump of a single cystic artery, Fig. 42, or an overlooked single cystic artery having an anomalous origin, Fig. 43, or a second cystic artery, Fig. 44.

(4) In the fourth group the accessory ducts are injured. There is no literature on this subject, for surgeons are unaware that these ducts exist and certainly are not in the habit of looking for them at operation. Kehr has reported a case in which the right hepatic duct emptied into the cystic duct and was included in the clamp applied to the cystic duct.

Flint believes that these ducts are injured as

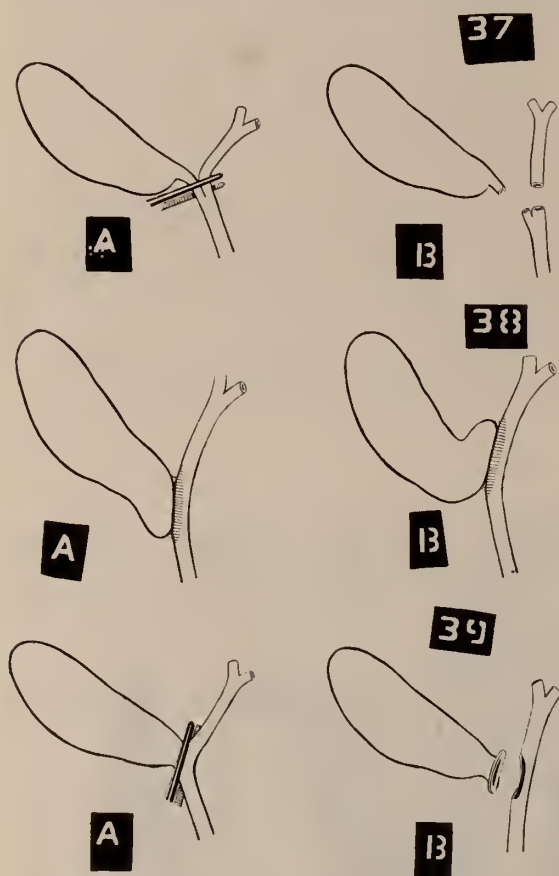


Fig. 37. Resection of the junction of the cystic, hepatic and common ducts, which might arise from the angulation due to traction during cholecystectomy when a clamp is applied to the cystic duct. (A.) Defect remaining after such an injury. (B.)

Fig. 38. Tear or division of the main hepatic duct which might arise in separating the upper side of the pelvis of the gall-bladder from the duct. (A.) Same type of injury which might arise in separating the lower side of the pelvis of the gallbladder. (B.)

Fig. 39. Clamping the hepatic and common ducts when cystic duct is very short. (A.) Defect remaining after such an injury.



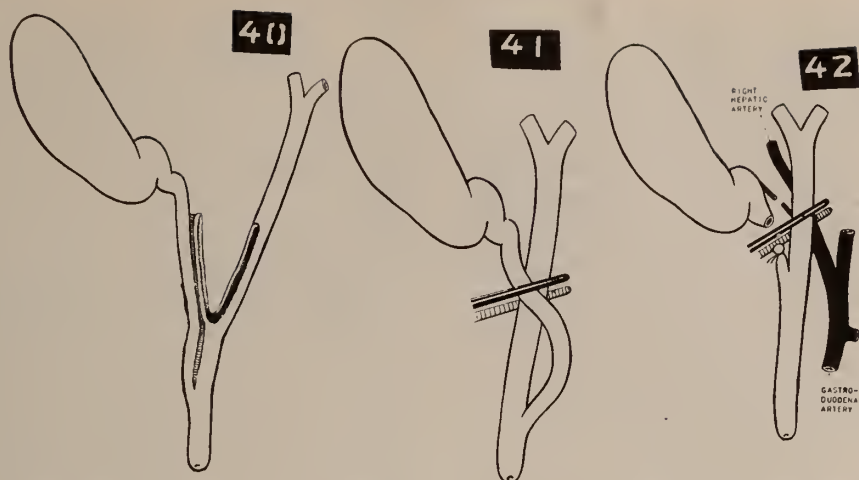


Fig. 40. Injury which may result to the hepatic duct when cystic and hepatic ducts run parallel for a long course.

Fig. 41. Injury which may arise to the hepatic duct when cystic duct winds around in front of it.

Fig. 42. Injury resulting to hepatic duct during effort to catch bleeding cystic artery.

frequently as the common duct if not more often. He has seen an accessory duct three times at operation during identification of the structures in the region of the cystic duct preparatory to clamping it. In one of his cases he saw bile coming from a cut open duct and thought he had divided the common bile duct, but on investigation this structure appeared to be intact. In order to strengthen his contention of the importance of these ducts to the surgeon, he went through the postmortem records of the cases dying after cholecystectomy at the Leeds' General Infirmary during the years 1908 to 1922, inclusive. During this period there were eight deaths due to bile leaking into the peritoneal cavity in considerable quantities. They were all cases of cholecystectomy without an accompanying choledochotomy. One of these deaths proved conclusively the importance of determining whether or not an accessory duct is present. The postmortem report was that there was present considerable bile in the abdomen; the gall-bladder had been removed and the ligature on the cystic duct was intact. Close to the liver but not in connection with the hepatic ducts proper there was an open bile duct and on squeezing bile exuded from it. In the other seven cases an extravasation of a considerable quantity of bile was noted, but the source not determined. He thinks that some, if not all of these cases had a divided accessory duct as in the previous case reported.

After cholecystectomy with drainage a small

percentage of cases discharge bile from the wound though the cystic duct has been ligatured. This begins at once or a few hours after the operation, and is obviously bile from a duct. It has been attributed to bile from the raw surface of the gall-bladder bed; but it is too profuse for that and, moreover, is not mixed with blood as it should be from this source. The other explanation given is that the ligature has slipped off the cystic duct. This does not seem to be an adequate explanation, for the cystic duct is easy to tie and there is only a very low pressure behind the ligature. In view of what has been said above, a much more reasonable supposition is that of an injured accessory duct.

Though it is bad surgery to injure these ducts,

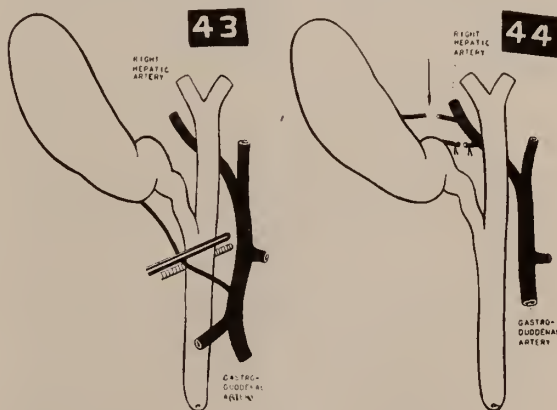


Fig. 43. Injury to the common duct during effort to catch anomalous bleeding cystic artery arising from the gastro-duodenal.

Fig. 44. Hemorrhage which may occur from an overlooked second cystic artery.

the probability is that little harm would result in the majority of cases, provided a drainage tube was left in. Many surgeons have advocated from time to time closure of the abdomen after cholecystectomy. Probably the fashion is more prevalent now than ever before. Some of these surgeons may not be aware of the possibility of the presence of accessory ducts, as the subject has never been raised in this connection, and closure of the abdomen with one of these ducts cut would be a disaster. Such an accident would in all probability be explained as leak from the cystic duct. To this the argument might be advanced by those who favor closure, that bile would be seen to flow from the open end of the duct during the operation and that the application of a ligature would make it safe to complete the abdominal closure. But this does not necessarily follow, for it is well known that after putting a tube in the common duct not a single drop of bile may appear sometimes for twenty-four or thirty-eight hours. Though this is not likely to happen after cholecystectomy alone, there is no doubt that in those cases associated with much hepatitis the secretion of the bile is more or less temporarily suspended. Moreover there is no objection of any moment to leaving a piece of rubber drain for one or two days through an incision which displaced the rectus outward. A hernia very seldom results, and it will save a life now and again.

Two interesting questions arise to which no definite answer can be given as yet:

1. What happens to that part of the liver drained by one of these ducts after a ligature has been applied?

2. What becomes of the duct if it be divided and left open?

As to the first question, only a limited part of the liver drains into this duct and one would expect a healthy organ would be able to compensate in its other parts, for the capacity of the liver cells to multiply in accordance with necessity is equaled by no other organ in the body. Flint performed an experiment with the object of finding out whether bile cut off in one part of the liver could make its way round to another. He ligatured the common duct low down, and also the cystic and left hepatic ducts. He then injected methylene blue in the upper

part of the common duct; the only way into the liver was up the right hepatic duct and yet bile appeared in both the right and left lobes. It is already known that bile can make its way from one group of liver cells to another in the immediate neighborhood.

Suppose that one of these accessory ducts was ligatured when the liver was not healthy, as, for instance, in a case of prolonged obstruction to the common duct. In such a case temporary suppression of bile is known to be not uncommon after operation, and it is quite possible that extra work thrown suddenly on the damaged liver, as would be the case after ligaturing a fairly large accessory duct, might cause a total suppression.

As to the second question, probably the open duct gradually closes as a result of the cicatricial changes in the area operated on, and the bile may subsequently find its way round to other parts of the liver, or possibly this part of the liver undergoes cirrhotic changes.

Though quite a large number of injuries to the bile ducts have been collected and reported by various writers, notably Eisendrath and Elliott, these probably only represent a small fraction of the total number of injuries that have been inflicted, for surgeons are ashamed of committing such errors, and rightly so, and do not feel disposed to advertise them. So long as surgeons continue to clamp and ligate structures in this region *en masse*, catastrophes are certain to occur. This can only be avoided by seeing everything and being familiar with all the abnormalities.

#### SUMMARY

Every surgeon should be familiar with the following anomalies:

1. The gall-bladder may be (a) absent, rudimentary or hour-glass; (b) it may lie more or less completely enveloped by the liver (intra-hepatic form); (c) the pelvis may be on the upper instead of the lower side; (d) right hepatic duct may empty in the gall-bladder; (e) there may be transposition of the viscera.

2. The cystic duct may be (a) double, i. e. there may be two cystic ducts; (b) an accessory hepatic duct may empty into either the cystic or the angle of junction of the cystic and main hepatic ducts; (c) the cystic duct may



be so greatly dilated as to be almost indistinguishable from the main hepatic duct; (d) the cystic duct may be very small and extremely short.

3. The hepatic ducts, (a) there may be accessory hepatic ducts.

4. The common duct may be (a) extremely short or very long; (b) a double common duct may be present; (c) in nearly sixty per cent. of individuals the common duct passes through the head of the pancreas.

5. The blood vessels. (a) There may be anomalies of the right hepatic artery; (b) of the single cystic artery; (c) of the double cystic arteries; (d) of the gastroduodenal artery.

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 Flint: *Brit. Jour. Surg.*, April, 1923.

I will demonstrate a forceps that I have devised for this work of ours that has stood me in very good stead, and that is to do away with the hands of the assistant during the operation. I have devised these forceps to grasp the liver in this way, and hold it up so that you can get at the various bile tracts. Dr. Williams kindly got this liver for me in order to demonstrate the forceps. They do no harm at all to the liver substance, but it does away with the hands of the assistant lifting up the liver.

In conjunction with that, I am using the reverse Trendelenberg position, that is get the patient up almost in the goiter position, an angle of 45 degrees, which allows of the heavy liver on the suspensory ligament coming down, at the same time the abdominal viscera fall away from the field of operation. It has stood me in very good stead.

I wanted to report to you in this connection, here is a most interesting case that I had lately. This is rather a unique case:

Mrs. H. B., aged 46 years. Mother of four children. Admitted to the Michael Reese Hospital, suffering with acute abdominal pains, especially in the left upper quadrant. Pulse 140; thready temperature 101; white count 20,000; 70 per cent. polymorphonuclears. Palpation reveals a mass in the left upper quadrant; on percussion and auscultation it was found that normal liver dullness was present on the left instead of the right side and a tympanic percussion sound was elicited over the right upper quadrant.

The apex beat corresponded to the fifth interspace on the right. The diagnosis was that of a situs in-

versus viscerum and was made with an acute empyema of a left-sided gall-bladder.

The desperate condition of the patient precluded immediate operation and for two hours she was treated by means of intravenous, glucose saline solution. Then under ethylene anaesthesia a left-sided midrectus incision was made and the gall-bladder was found lying on the left upper quadrant. The stomach in the right upper quadrant and on bringing up the cecum to inspect the appendix it was found in the left iliac fossa.

Due to the desperate condition of the patient, the gall-bladder was simply drained, the same containing a large quantity of pus, but no stones, the serous surface was covered with a pyogenic membrane.

The patient made an uneventful recovery.

#### DISCUSSION

Dr. R. W. Viehe, Evansville, Ind.: I am sure we all appreciate the paper that Dr. Friend has come to give us. I think he has very clearly brought out to us who are doing gall-bladder surgery, that we are not only dealing with the pathological condition but, in a very large percentage of cases, we are dealing with abnormal conditions. There is a very small percentage of cases in which the ducts and vessels are entirely normal.

As to the point of the right hepatic vessel which he showed in one diagram, arising low and curling over the front of the common duct, this condition was described by Moynihan. I think he describes it this way: If you pick up the gall-bladder and put the cystic duct on the stretch, the large vessel sometimes has a hump there similar to the hump, as he calls it, of the caterpillar in motion. The presence of that hump should put us on guard, as we are probably dealing with an anomalous hepatic artery. One can realize what danger or what damage was added by ligating the right hepatic artery which is supplying the liver cells, which are already damaged by disease.

The accessory ducts, as he showed you, are formed in a considerable number of cases. Anyone who has done gall-bladder surgery, after ligating the cystic duct, and leaving the patient in good condition, free from drainage at the time of operation, then comes back in the evening or the next morning and finds it accentuated with bile, will probably account for the curling of the accessory ducts. The injury to the accessory ducts is not so serious in the end results, except they prolong drainage, and, to my mind, clearly emphasize the fact of always draining gall-bladder cases. I believe there are some men today who will remove a gall-bladder and close the abdomen without draining. I always drain in gall-bladder cases.

I had the pleasure a few years ago in Chicago of attending the A. M. A. meeting, I think it was, and saw Dr. Friend demonstrate this same clamp. I took advantage of it and have been using the clamp and, too, have found it of great help in exposing the under-surface of the liver. I have never seen it tear or do any damage to the liver. I might also add that I was very fortunate not long ago to have a young man in

the hospital who had a transposition of the viscera.

Dr. Emanuel Friend, Chicago, Ill.: As I said before, I am very thankful to be able to bring this subject before you. If I had continued to finish this paper, I would have brought out one important point that Dr. Viehe spoke about, and that is there is not such great harm in cutting accessory ducts if you drain. Ultimately you have from the reaction, agglutination of those ducts, and they do not create any trouble by cutting, if you drain.

I believe as he does, and have carried it out in my practice, never close an abdomen after cholecystostomy. I generally insert a Bullet drain. This is named after an army surgeon, Dr. Bullet. This lies up against the raw surface. It would be rather egotistical if I mentioned the results that we have in our cases of all kinds, and the records will show it.

In taking this subject up with Dr. Moskowitz of Mt. Sinai Hospital, New York, he asked me whether a number of the Chicago men do close the abdomen. He said, "Well, that is just my idea. I have grown to an age where I want to sleep at night, and I drain every one of them." That is not alone for a cut accessory duct but from the spilling of bile or infectious material in the abdomen. Understand me right, the average bile is not infectious unless it is contaminated by means of pus. I don't remember ever losing a patient from peritonitis in gall-bladder work. I have drained every one of them. I will pass this about. It is just a piece of gauze with a piece of gutta-percha. He sounded the keynote, to drain those cases, and you are much safer.

5 North Wabash Ave.

## SENILE CATARACT SIMPLIFIED FACOERISIS\*

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It is generally conceded that a senile cataract removed within its capsule requires more skill than the capsulotomy operation, but lessens the patient's stay in the hospital, eliminates secondary operations, and produces better results, providing the operation can be performed with no complications other than those of the capsulotomy operation.

Vitreous loss seems to be the principal objection to all methods of operating for cataract, and especially all intracapsular methods; but, if the intracapsular operation is understood, and its technique properly followed, there is but lit-

tle vitreous loss and burst capsule would be the main reason of disapproval. Intracapsular operators report about ten per cent of ruptured capsules which are classed by them as complications, but if this is a complication, then the capsulotomy operators must admit one hundred per cent of complications from this source.

Some definite procedure that is not dangerous to the patient will naturally result from the various intracapsular methods having good points which can be performed successfully by average operators.

*Preparation of the Patient:* If the lids, sac, pupil, tension and smear are negative, a general examination is made which includes examination of urine, blood sugar and blood pressure. If the blood pressure is over 150, it is well to draw off ten ounces of blood from a vein one hour before operating. Three or four drops of a two per cent. solution of homatropin or an ointment of five per cent. euphthalminae, and five per cent. cocaine is instilled into the eye every forty-five minutes until full dilation is obtained, one or two applications usually being sufficient. Before cleaning the face for operation, a few drops of a five per cent. solution of cocaine is instilled into each eye, and, after four minutes, the face, brow and lashes are washed with soap and water; then with alcohol. The brow, lashes, lids, and the skin for two inches around the eye, are painted with five per cent. solution of iodine.

The injection of five cc of two per cent. of novocain solution is made ten or more minutes before operating (Fig. 1). Added to this ten



Fig. 1. Method of procedure in three injections of 5cc of two per cent. novocain in order to effect complete relaxation of the orbicularis palpebrarum.

\*Read before the Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Peoria, May 22, 1929.



drops are injected under the skin at the inner side of the nose. Pain is sometimes complained of from the injection, but this is lessened if a very small, sharp needle is used, first injecting superficially a small amount; then, after three or four minutes, the deep injection is finished



Fig. 2. Author's upper lid hook.

with a large, long needle, injecting the solution as the needle is slowly withdrawn. The injection of novocain is imperative because it is difficult to know how a patient will perform when operated upon. A few drops of a five per cent. solution of cocaine is instilled into the eye every four minutes for four or five times, or until anesthesia is complete.

If the operator has reason to believe the patient will not fully co-operate it is well to do a canthoplasty and insert a suture to be tied when the cataract operation is finished. It is also advisable in such a case to inject five drops of a four per cent. solution of cocaine deep in the orbital cavity above, and ten drops of a two per cent. novocain solution deep in the orbital

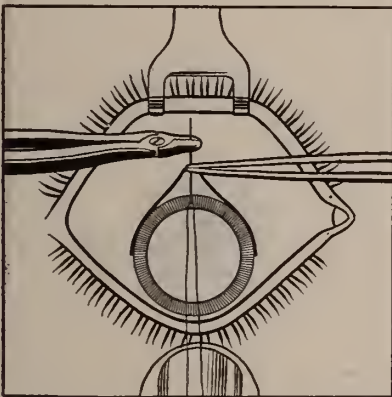


Fig. 3. Pupil is fully dilated, the incision is made and conjunctival suture placed.

cavity below, before beginning the operation. If these precautions are taken, general anesthesia will scarcely ever be necessary.

*The Operation:* A skin suture is placed in the upper and lower lid to be tied when the operation is finished.

A white silk suture is passed through the superior rectus muscle and given to the assistant to hold along with the upper lid hook. This suture is often used to pull the eye down when clearing the eye of debris and making the toilet.

The upper lid is held by a nurse or assistant,

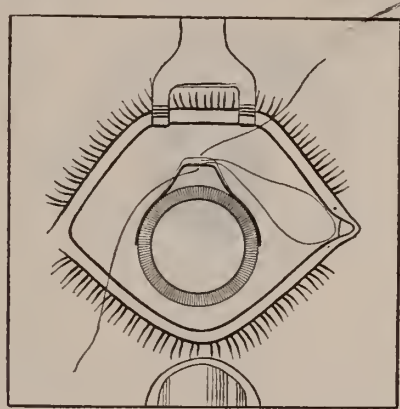


Fig. 4. The untied thread is looped at the inner canthus where it will not interfere with lens delivery. The pupil is fully dilated.

with an upper lid hook (Fig. 2). The lower lid is held by the thumb. The eye is flushed with six ounces of warm bichloride of mercury solution, 1 to 5,000, and the excess removed with a sterile medicine dropper.

*The Incision:* The incision should be just a

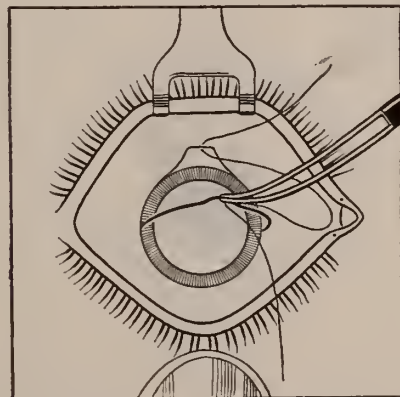


Fig. 5. The conjunctival flap is held up with fine forceps. The erisifaco can be readily applied to the lens without looking through the cornea. The pupil is fully dilated.

little less than one-half of the cornea, terminating in a conjunctival flap.

*Conjunctival Suture:* A suture is placed in the conjunctival flap (Fig. 3). The thread is

looped at the inner canthus to allow escape of the lens (Fig. 4).

The operator turns down the conjunctival flap with delicate forceps (Fig. 5) and places

and at the same time the top end of the suture is pulled upon to straighten the loop (Fig. 7). When the suture is tied, the pupil will usually be found contracted and peripheral iridectomy

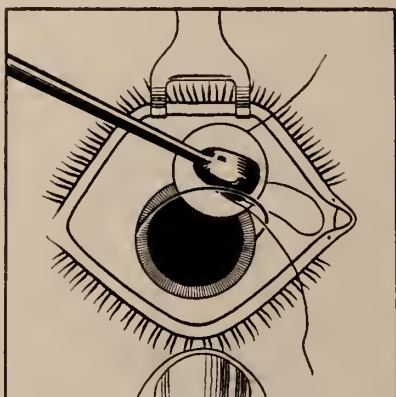


Fig. 6. The lens is delivered slowly passing over the edge of the fully dilated pupil. The thread loop is seen in the inner canthus.

the sterilized erisifaco directly and evenly upon the lens, and without the slightest pressure upon the lens, presses the button of the erisifaco. After counting seven, or about seven seconds, the erisifaco will be firmly adherent to the lens and the extraction is made by raising the lens up and out top side first, not tumbling (Fig. 6).

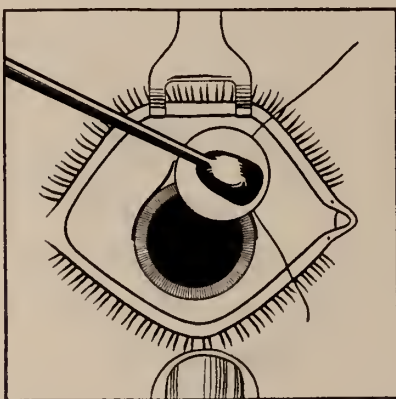


Fig. 7. The lens is delivered, and while adhering to the suction cup, is placed over the conjunctival flap, rubbing it gently which straightens out the flap, and pulling the top end of the thread, straightens out the loop. The pupil is fully dilated.

Slight pressure upon the cornea below is made when the lens refuses to be born.

When the lens is out and adhering to the erisifaco, the corneal wound is gently rubbed with the lens to straighten out the conjunctival flap

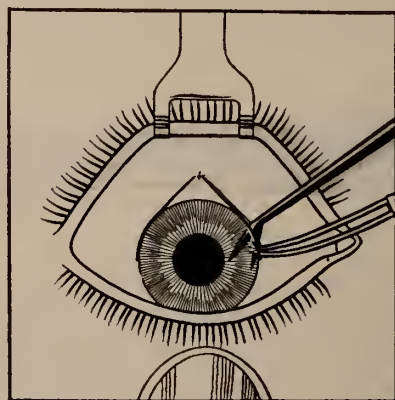


Fig. 8. The conjunctival suture is tied. The Hess iris forceps is passed into the anterior chamber at the outer or inner angle of the wound, the iris grasped and cut within the anterior chamber with Pasheff scissors. If the iris is pulled out of the wound a full iridectomy is liable to be made instead of peripheral. (Note the ease with which the peripheral iridectomy can be made on account of the contracted pupil after the conjunctival suture is tied.)

can be made at the puncture or counter puncture (Fig. 8). Should the pupil not contract, peripheral iridectomy may be omitted. The finished operation is pictured in Figure 9.

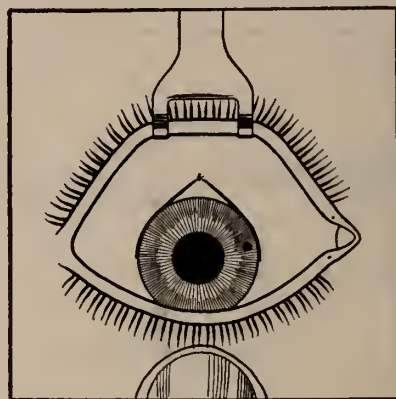


Fig. 9. Finished operation. The pupil is contracted, the conjunctival suture is seen at top and the peripheral iridectomy at side. Barraquer makes peripheral iridectomy in the same way at top before lens is delivered. Elschmig makes it in the same place with scissors, not using forceps.

Two or three drops of a two per cent. solution of eserine is instilled. Five per cent. solution of iodine is applied to the wound with a cotton carrier, the superior rectus suture is removed,



and the lid suture is loosely tied. Yellow oxide of mercury ointment from a tube is applied to the lids and the eyes bandaged. The lid suture is removed after twenty-four hours.

*Technique:* To successfully remove cataracts by facoerisis, or by other methods, requires much experience. Six-weeks-old kitten's eyes offer good practice for making the incision and peripheral iridectomy.

Inserting and tying the conjunctival suture and for practicing facoerisis with chicken lenses see Figure 10.

The steps in simplified facoerisis technique will be easily followed by the accompanying illustrations:

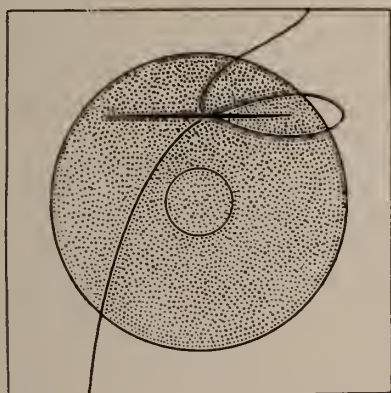


Fig. 10. Represents a method of practicing facoerisis.

The end of a large spool is covered with black cloth and a round hole is made in the center. A piece of transparent cloth is placed over the black with a slit to represent the incision. A thread is inserted to represent a conjunctival suture and looped for exit of lens. The hole in the spool is filled with cotton to within 1/16th inch of the top. On top of the cotton is placed the lens of a freshly killed chicken.

The edge of the incision is picked up with fine forceps, exposing the lens and the erisifaco is placed evenly upon the lens. Without using any pressure the button of the erisifaco is pressed upon. This position is held while the operator counts seven, or about seven seconds.

The lens is lifted slowly, or drawn up and out. When the lens is out and adhering to the erisifaco, the lens is placed upon the incision, gently rubbing it which straightens the conjunctival flap and the upper end of the suture is pulled which straightens the loop. The suture is then tied, using forceps.

*Complications:* A poor incision, blood in the anterior chamber that cannot be removed, cutting the iris while making the incision, or a nervous patient, warrants an operator in changing from a new procedure to one he is in the

habit of doing. If the erisifaco slips, the zonula will probably be broken and the lens can be removed by the Smith or Knapp method as a tumbler.

If vitreous loss occur before the lens is delivered, a full iridectomy is made and the lens is removed with a Smith spoon, the conjunctival suture is tied, and the toilet made.

If vitreous loss occur after the delivery of the lens, the conjunctival suture is tied and any tags of vitreous that are in the wound are cut off with scissors.

If the capsule is ruptured, the lens is removed and the conjunctival suture tied after which the eye is cleared of lens matter. Two per cent. atropin is instilled after any complication.

*After Care:* The unoperated eye is made free the second day and the patient allowed to be up. There is no good reason for inspecting the eye for three or four days, but the danger of early and frequent dressing is lessened by the use of the conjunctival suture. Uncomplicated cases do not usually require treatment and at the end of a week, the bandage can usually be omitted and dark glasses substituted.

*Pain:* An enema, two live leeches to the temple, ten grains of aspirin together with one grain of blue mass T. I. D., as recommended by Smith, will probably be more effective than treatment with eye drops; however, atropin is often indicated but should be used cautiously.

*Blood Injection:* If vitreous loss or ruptured capsule occur, a blood injection is given the following day, as follows: Fifteen cc of the patient's blood is drawn from a vein, placed in a sterile test tube for 45 minutes; then stirred with a sterile glass rod; let stand five minutes; draw off 5 cc of serum and inject into a muscle. Every three days for three more injections, 15 cc of blood is removed from a vein in the same way and injected into a muscle at once before clotting. The object of this autohemotherapy, which is also effective in the treatment of sympathetic inflammation, is to prevent the development of post operative inflammation.

#### FACOERISIS (Barraquer)

Pupil dilated but not too wide for peripheral iridectomy. Peripheral iridectomy is made before lens delivery. Erisifaco passed under cornea and placed upon the lens. Lens tumbled and brought out bottom side first. Peripheral iridectomy above before lens delivery.

## FACIOERISIS

(Simplified)

Pupil too wide for peripheral iridectomy. (Fig. 3).

Peripheral iridectomy is made after lens delivery. (Fig. 8).

Corneal flap pulled down exposing lens for placing erisifaco. (Fig. 5).

Lens brought out top side first, over the fully dilated pupil. (Fig. 6).

Peripheral iridectomy at puncture or counter puncture after lens delivery and the conjunctival suture is tied. (Fig. 9).

## CONCLUSIONS:

The well-dilated pupil, complete anesthesia, the employment of lid hooks, raising the conjunctival flap and thereby exposing the lens, facilitates placing the erisifaco evenly upon the lens, without catching the iris, which is all-important. Lifting the lens slowly up and out will appeal to many. When the lens is out and the conjunctival suture is tied, the pupil usually contracts and peripheral iridectomy at puncture or counter puncture is readily made. The percentage of complications at time of operation will be reduced to a minimum, and when performed without complications there is no secondary operation and post operative complications are rare, the best possible vision is obtained, and the time in the hospital is greatly reduced. Last and best of all, the operation can be performed when the patient is unable to do that which he is called upon to do.

231 W. Washington St.

## DISCUSSION

Dr. Carson K. Gabriel, Quincy, Ill.: If a method can be devised so that the lens can be removed within its capsule as safely as by the extra-capsular methods now employed, this method is ideal. I think that cortical substance remaining in the anterior chamber after operation is a distinct menace to the eye. In a number of cases in which we have used the Barraquer method, our results have been very satisfactory. We have used a different method of injecting for producing akinesis. The temporal facial branch of the seventh cranial nerve is injected. This branch is located by palpating over the temporal mandibular articulation while the patient opens and closes the mouth and then with the mouth closed a needle is inserted down to the condyle of the mandible. Two cubic centimeters of novocain is then injected, slowly withdrawing the needle while injecting. This produces complete paralysis of the muscles concerned in forced lid closure. There is a pronounced disadvantage to this complete paralysis in that the eye has a tendency to remain open. For this reason one should use extreme care in keeping the lids closed while bandaging the eye. Dr. Fisher overcomes this difficulty by using a lid suture. We tie a knot in the distal end of the

conjunctival suture before inserting; the suture is passed through the flap first and then the bulbar conjunctiva. It is then unnecessary to use a forceps in turning the flap down when placing the erisifaco on the lens; simply lift the flap with the suture; the knot prevents it from passing through the conjunctival flap. In most of the cases I have seen, the pupil did not contract after the lens had been removed, and in all but two cases, it was absolutely impossible to perform a peripheral iridectomy. I think that in trying to perform this iridectomy after removal of the lens there is a distinct danger in rupturing the hyaloid membrane and causing vitreous loss.

Dr. C. Hopkins Long, Chicago: I do not know much about this operation, but I observed Dr. Fisher do it about three weeks ago and was very much struck with the technique and the beautiful toilet he made after the operation.

Dr. E. V. L. Brown, Chicago: We have been using morphin for anesthesia in this way; one-eighth grain with scopolamin 1-160 grain the night before, to learn if the patient has any tendency to vomit. Next day three-quarters of an hour before operation, we repeat the injection. The patient has no pain. Will Dr. Fisher please tell us about how many cases he has operated on by this method.

Dr. George Francis Suker, Chicago: For many years I have used scopolamin and morphin and found it useful. I would not advise anyone using morphin alone on account of the nausea caused. Scopolamin 1/150 grain and 1/6 grain morphin given one hour before operation produces a calm in the patient which is very helpful. In giving a general anesthetic in adult, we give two injections of the above, one two hours and a second one hour prior to hour of operation. The patient does not have the uncomfortable recovery from the anesthesia—nor is very much ether needed in producing a profound and continue anesthesia.

Dr. William A. Fisher, Chicago (closing): The only trouble Dr. Gabriel seems to have had is that the pupil will not contract in order that he can do a peripheral iridectomy. If atropin is used the pupil will not readily contract and should not be used. If homatropin is used 4 or 5 drops are instilled into the eye 45 minutes before the operation and repeated if the pupil is not dilated, or an ointment of per cent. cocain with 5 per cent. euphthalminae is inserted between the lids 45 minutes before the operation and repeated if the pupil is not dilated. The eye is kept closed while being dilated. If the pupil is made too large it will not contract, and peripheral iridectomy would be difficult.

Dr. Brown asked how many cases I have done. I have been operating by the method described for eighteen months, and I have had very few complications. I do not give morphin because I do not like to use it. I do not think it does a patient any good. I do not give medicine of any kind before a cataract operation, because I have no trouble without it. Novocain is perfectly satisfactory if properly injected.



## IMPRESSIONS BY THE RETIRING PRESIDENT OF THE CHICAGO MEDICAL SOCIETY

FRANK R. MORTON, M. D.

### CHICAGO

It is difficult to say whether I am glad or sorry that my term of office comes to a close. I do know that during my term as president-elect and as president many subjects of vital importance have come up for discussion and action by the officers and the Council. Some of them I feel were of great importance not only to medical men in Chicago, but to the profession all over the country.

From what I have learned in talking with physicians from various parts of the country, I want to assure you that the eyes of the medical profession today are turned upon the Chicago Medical Society. They feel we must maintain a firm stand and uphold the traditions which have been built up through years of service in the practice of medicine, not only for the public good, but for the professional good; that we must not let outside interests turn us from our viewpoint; that medicine is not a business but a profession and cannot be considered as a commercial undertaking. In short we have a responsibility to the medical profession at large, as well as a continuing responsibility to ourselves.

The record of the Chicago Medical Society during the last few years has been one of continued improvement. You all know we are the largest local medical society in the world. Our membership has increased from 3600 to over 4300 during the last four years. Our financial resources have increased gradually, and our surplus is invested in sound securities. We have been fortunate in having a capable, energetic and active board of trustees. We know our general offices are conducted in an up-to-date business manner. Our resources are limited, however, by the amount of dues. Expansion of activities rests in large measure on an increased revenue from this source. No society receives so much for so little outlay as does this one. As a parting suggestion, I would urge a substantial increase in dues to provide funds for the growth of the Society.

We are ever ready and anxious to be of service

to any and all of our members. The various committees of the Society are organized to do the work assigned them in a thorough and useful way. In spite of irresponsible rumor and even printed comment that the profession in Chicago has been disorganized and the Society split in half, we are proud to say that during the last few months we have had only three resignations and during this same period more than 100 new applications. We feel that the profession in Chicago, particularly the members of our Society, are more in unison and believe more firmly in the ethical practice of medicine than ever before. We now have a more unified fellowship and co-operation among our members than at any time in the past twenty years. All but one of the important local medical societies are now affiliated with the Chicago Medical Society.

We enjoy active co-operation and close relationship with the city, county and state departments of health. We have no misunderstanding with any real charitable organization in Cook County. This includes all social and welfare agencies. We have agreements as to the conduct of the hospitals and dispensaries of the University of Chicago and the University of Illinois. We know we have the active co-operation and good will of the medical departments of Northwestern University and Loyola University.

We enjoy the distinction of being the first local medical society to employ a full time executive secretary. Your officers and board of trustees, even after the short experience of six months, feel that this is one of the most important and progressive steps the Society has ever taken. We have been fortunate in finding a man for this position who is a medical man, a member of our own organization who has had years of experience in health and social activities.

The Illinois State Medical Society, through expression by the officers of two important committees—the educational and the legislative, feels that in large measure the maintenance of the integrity of the profession in this state during the last few years has been due to the wholehearted co-operation of the members of the Chicago Medical Society. This co-operation has been given in advancing the scientific aspects of medicine among down-state societies, luncheon clubs, and similar civic bodies.

Two years ago we faced a very serious situation in an organized movement directed at physicians and ostensibly started by them that had all the earmarks of being a racket. Later on we learned that if the organization succeeded there was a strong possibility the next move would be the unionization of medicine in this city. I know you will all agree that the success of this movement would have been a very serious blow, not only to the profession, but more so to the public. The activities of this new movement were stopped only by strenuous work on the part of the officers and the Council and of many active members with co-operation from the Employers' Association of Chicago. This menace is by no means a thing of the past. It is only waiting for a favorable opportunity again to become active. Free speech and freedom of action are inherent rights of the American people; but when the exercise of these rights calls into question the welfare of the community, they are restricted by law and should be restricted in fact. The activities of those who jeopardize the future of medicine by suggesting the strong-arm methods of the racketeer must be watched, and, wherever and whenever they come into evidence, vigorously frustrated.

During my term of office two situations have arisen in which the Medical Society had the co-operation of other civic bodies in a most helpful way. An attempt was made to establish a branch dispensary for the Chicago Lying-In Hospital in the South Chicago district. A survey among the industries in that vicinity showed that little assistance of the kind contemplated was needed. The facts in the case were placed before the South Chicago Chamber of Commerce which promptly went on record as opposed to the establishment of such a dispensary in the community, thereby effectively disposing of that situation.

More recently in the Northwest district campaigns were inaugurated for the collection of a large endowment for one of the hospitals. This drive had the endorsement of the Association of Commerce; but when it was brought to the attention of the Association that a portion of this endowment was to be used for the establishment of a free clinic at this hospital, prompt action by the Association in co-operation with the work done by the Northwest branch caused a sudden and complete abandonment of the plans of this hospital so far as they pertain to the clinic.

### *Commercialization of Medicine*

Articles appearing in print during the last few months, following the expulsion of a member of our Society for violation of our code of ethics, and the quoted comments of certain individuals conspicuous in the public eye, leads one to believe there is a determined movement on foot to commercialize medicine. Commercialized medicine, in my opinion, is the practice of medicine on a merchandising basis made possible through advertising campaigns designed primarily for the purpose of attracting and treating patients in large numbers by so-called standardized methods. The plea of those who advocate the treatment of patients en masse is that medical costs are lowered. By studying a famous institute operating in the city of Chicago one can learn that the main object of this institute is to treat an ever-increasing number of patients. Scientific treatment has found no place in that organization. The public has somehow been led to believe that this institute advertises from an educational standpoint only, and that it is necessary to guide the public mind along the lines of their specialty: that it is a charitable organization, entitled to special and favorable consideration; whereas, in fact, the advertising is of a commonly familiar commercial character, and the organization itself is one of the leading money makers offering biological service to the public. The charter calls it a non-profit organization. This is literally true if earnings transferred to surplus are not profits, and if present prices by permitting a surplus are not too high. And to make this institute appear as a public-spirited organization, it has made contributions to hospitals and universities for research work. After a thorough study of this institution we are of the opinion that, if all the branches of medicine were practised along the same lines in Chicago, or elsewhere in this country, there would soon be a break-down of scientific progress. Medicine should not and cannot be scientifically practised in this manner.

We have been advised in print that the code of ethics of the medical profession should be changed to conform to modern ideas, particularly modern business ideas. Such evidence seems to proceed from two errors—first, that doctors are reactionaries by nature of their profession—and second, that medicine is a mechanical art. Our advisers mean well. Their thinking is at fault.



If this profession lets down one iota in its ethics, which are based solely on admitted moral precepts, and if we accept even in a small way commercialism, with the merchandising type of advertising as a drawing card for patients, it will be the downfall of a great profession, and the public will be the greatest sufferer.

It has been clearly shown—too often for fresh proof here—that 90 per cent of sick people are best taken care of by their family physician, who knows about their habits, family and personal history and other elements entering into the cause of sickness. This intimate knowledge can be obtained only by physicians who have a close personal contact with their patients. Mass treatment of patients by standardized methods will never take the place of a personal service by the experienced type of general practitioners who are now being graduated from the large medical colleges in this country.

Medical care has always been given regardless of the financial status of the sick person. No true physician refuses help to those in need of it. Physicians have asked only that they be treated fairly; that the sick pay only what they are financially able to pay, and this should be charged accordingly to the earning capacity of the public. Those unable to pay should and must receive medical care. That they do receive it from physicians is too obvious for comment. Students starting on a medical career do not do so with the thought that they are going into a commercial business but that they are preparing to render service to humanity; that any financial returns are only a secondary objective in their life work. A study of the history of outstanding medical men, possibly a study of the income tax returns of this country, will prove that medicine alone has never been the producer of even moderate fortunes or incomes. I doubt very much whether a large percentage of physicians have become even financially independent through the earnings of their practice.

When we remember that during the past seven years this country has enjoyed the greatest prosperity in the history of the world, we wonder why the charity budget for Chicago has increased from eight million dollars to twenty-five million dollars, the amount spent last year. Talk about the high cost of being sick, how about the high cost of charity? And we wonder what the public

would think and say if there were added to this staggering bill for charity the millions of dollars in free or partial cost service which the doctors of Chicago and Cook County give quietly every year to the needy or the financially embarrassed people of this community! Suppose the public and Chicago business had to shoulder a tax burden for these millions which the doctors quietly contribute?

I feel that the medical profession, not only in Chicago, but all over the country, is facing a real crisis. The question is: shall we let down the bars on our ethics and on our standards of practice? Whatever we do will affect our profession the country over. We have an opportunity and an obligation to affect favorably the practice of medicine. Should we falter, there is much to be lost. To carry on effectively, the assistance of all our members is essential. No group can afford to sit by and say that passing events have no interest for them. Regardless of the position they have reached in their chosen specialty, they still owe a duty to the profession to see that conditions inimical to its welfare are not imposed by outside forces acting for personal gain or publicity. Medical schools are also vitally concerned in the problem that now agitates the profession, and unless they are willing to support the fight against the encroachment of ulterior forces in the field of medicine, it will be useless for them to turn out high class, capable, young physicians, if after a few years these same physicians must compromise their ideals and accept the viewpoint of forces now destructive to true medical progress.

I want, finally, to thank the officers, the councilors, and the various branch officials for their complete and ever ready assistance which I have always had, not only as secretary, but as president-elect and as president.

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## THE ANATOMY AND PHYSIOLOGY OF THE NORMAL SPINE AND PELVIS\*

E. J. CAREY, M. D.

MILWAUKEE, WISCONSIN

There is no question but that the normal anatomy and physiology of the spine is becoming increasingly important, due to automobile in-

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\*Read before Radiological Section of Illinois State Medical Society, May 8, 1928.

juries and insistence on the exact knowledge by industrial commissions and insurance companies.

The spinal column acts as a protecting case for the central nervous system. It is approximately, on the average, seventy centimeters in length in the male and in the female approximately two and five-tenths to three centimeters less.

The spinal column is arranged in a series of elements with the bodies ventrally and the arch portion dorsally placed. This particular series of bony elements in the cervical region approximates one-sixth of the entire length of the spinal column. In the thoracic region, it is approximately one-half the entire length and in the lumbar region approximately one-fourth. Of this entire series of vertebrae in the cervical, thoracic, lumbar and sacral region, one-fourth of the entire length is made up of the intervertebral discs, or cushions that act as buffers in the transmission of body weight through muscle action.

In the series of curves we find in the spinal column, when we look at it in profile view, four in number. In the cervical region, the curve has its convexity direct toward the front. In the chest region, the convexity is directed dorsad, and in the lumbar region the curve is directed toward the front as convexity. In the sacral or pelvic region, we find the curve directed toward the front as a concavity, so we have the alternating convex-concave arrangement, which gives greater elasticity in the transmission of body weight, and, at the same time, gives greater stability and support.

A curved column with four series of curves, as we find it, is approximately sixteen times stronger than if it were one single straight line made up of the series of elements as we find them. The movements that are capable of being made in the spinal column are variable in different parts of the region. The four main movements are ventral flexion, dorsal extension, lateral flexion, or abduction from the median line and torsion around a vertical axis.

In the cervical region, we find flexion and extension are capable of being executed rather easily in degree; whereas abduction or lateral flexions to the left or right are limited. The rotation is capable of being freely made in the

cervical region; whereas in the thoracic region there is marked limitation of movement in the ventral and dorsal direction. In other words, flexion and extension are extremely limited; whereas lateral movement is more freely executed than ventral flexion or dorsal extension. Rotation in the thoracic region is capable of being executed more freely than in the lumbar region; whereas in the lumbar region the four types of movement, ventral flexion, dorsal extension, laterally to the left and to the right, are more easily made than in any other region of the spinal column. Rotation, however, is slightly limited over that found in the thoracic region.

One of the reasons I go into detail in regard to the various movements is to emphasize the structure of the vertebrae. At the present time the majority of anatomists look upon the cancellus bone in the body of the vertebrae as being laid down due to the static pressure of body weight in the upright position. As we look at the various sections of the radiograms thrown on the screen, I want you to keep in mind the various degrees of mobility in the different parts of the spine.

In the new-born, we find that we do not have these four groups of curves that I mentioned. At about the third month infants are able to flex the head. You will find that the cervical curve with its convexity ventrally is developed, whereas the lumbar curve does not begin to develop until the child is capable of walking or standing in the upright position, at about the twelfth to the fourteenth month.

(Slides.)

The slides illustrate the structure of cancellous bone in bodies of the vertebrae correlated to the movements executed and the back pressure vectors produced in the vertebral bodies by group muscle pull.

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## PREGNANCY AND LABOR IN WOMAN SUFFERING FROM GENERAL PARALYSIS

B. LEMCHEN, M. D.

Chicago State Hospital

DUNNING, ILL.

The medical literature is meager on pregnancies in women suffering from general paralysis. The textbooks do not mention it.

In my experience of 19 years on the resident



staffs of various hospitals, of which 17 are insane hospitals, only two pregnancies in a general paralytic woman came under my observation. One was a miscarriage of a death fetus of about 5 months pregnancy and this is the second case—where I delivered a living and apparently normal child. The treatment the mother received unquestionably had a good deal to do with it. I think the case is rare enough to be reported. It is as follows:

Lydia D. Was admitted to the Chicago State Hospital, February 17, 1927. She was 35 years old and born in Norway. At the time of her admission she was pregnant.

History given by husband: Family negative. They were married in July, 1925. About 4 months after marriage patient had a miscarriage. She has been seclusive as long as the husband has known her. Over a month ago patient complained of a cold in her head, for which they consulted a physician. He diagnosed her case as sinus trouble and gave her treatment. After the second treatment he noticed that she was acting queerly. She complained of being choked up and of insomnia. She lost interest in her personal appearance and neglected her house. When friends visited her she would leave them and go to another room. She became mute and negativistic and would talk to herself in a monotone. She finally had to be committed.

History by a brother: Patient came to the United States from Norway ten years ago and did housework. She was married to a Syrian one and one-half years ago. The brother was against this marriage on account of the difference of religion and nationality. At the age of 25 she had a love affair and expected to marry, but the man turned her down. Her brother was told that she had a luetic infection and for a few months was confined in a hospital and received treatment. Her husband was told about it but he married her anyway.

History by a sister: Three years ago she had a nervous break down and the sister cared for her for eight months. She came home from work one day saying she was tired, ill, and complained of insomnia. She neglected her personal appearance and would sit and stare into space. There is no history of either visual or auditory hallucinosis at that time. Upon one occasion she said that she had nothing to live for but did not attempt to harm herself or others. She had one convulsion that lasted about five minutes. As far as the sister knows she has had no other.

The notes from the Social Service at the Psychopathic Hospital state that the patient was transferred from Ward 50 of the Cook County Hospital where she was admitted February 3, 1927. A diagnosis of Psychosis with Pregnancy was made. Her temperature ranged from 98.6 to 98.8. She has been irrational at times, uncooperative, and noisy. Wassermann

was negative. Urine shows no pathological findings besides a few questionable casts. No symptoms referable to her five months' pregnancy.

Notes from the Psychopathic Hospital state: She thinks that a brother has it in for her. She hears spirits talking to her. They tell her a lot of things. She frequently goes to a medium and sees the spirits. They are wonderful. She says she thinks she will be confined tomorrow.

When admitted to the Chicago State Hospital she was clear and oriented. Stated she was 35 years old and born in Norway. Attended school for seven years and after leaving school she did sewing and embroidering. She stated that she came to the United States eleven years ago. She has been married one and one-half years and believes to be seven months pregnant. She has been in good health except that she is having a little gas in the stomach. Her husband is a good man. Questioned about her commitment she states her husband sent her here because she was mean and did not give him any food for three days. States she heard the voices of spirits talking to her for five years. They always talked nice to her. She used to go to mediums but has decided not to go to them any more as she is a Methodist. She voluntarily states that she met a fellow eleven years ago who gave her syphilis and for several years she received treatment and was told that her blood was pure. His sister made him leave her millions of dollars for it and she wants to help her husband pay a second mortgage. Says her husband knew she had syphilis previous to her marriage. Says her husband never gave her any money. He only gave her \$15 for food and that is the reason she had to go to the neighbors and ask for nickels when she wanted to phone. Says she suffered from headaches and dizziness. Lately she has not been bothered with those voices. She knows that she was in a hospital and asked the examiner the name of the hospital and if the patients here are crazy and if they can be cured. She laughs when asked if she thinks she is insane. States she does not believe there is anything wrong with her mind. She gave the date and also when she came here. She knew how many months there are in a year but not the number of days. She thinks there are 56 weeks in a year, could name the president, but not the governor. She could only do the smallest numbers in calculation. Stated she believes her husband from now on will be better to her and wants to go back to him. She will try and eat all she can when she gets back home as she has \$90,000 which she knows she will get after she leaves here.

Physically she is fairly well nourished. There is a slight enlargement of the thyroid. Breathing was normal. Heart not enlarged, no murmurs. Blood pressure 90 systolic and 50 diastolic. Teeth in poor condition. Appetite good. There was a palpable asymmetrical globular mass in the abdomen, apparently about 6 months' pregnancy. Pain and tactile senses present. Recognized taste but not smell of the test

solutions. No tenderness on deep pressure. Coordination fair. Sways in Romberg position. Reflexes. Pupils react to light, accommodation, regular and equal. Superficial reflexes present, deep, are brisk. Organic intact and plantar normal.

Laboratory report: Urine analysis: specific gravity 1022; reaction acid; no albumin or sugar. Microscopical negative. Blood Wassermann negative. Spinal fluid 34 cells. Pandy Ross Jones and Nonneapelt 4 plus. Also Wassermann on the fluid gave a 4 plus reaction. Another examination of the fluid, which was made on February 28, 1927, gave 27 cells. Pandy, Ross Jones, and Nonne Apelt 4 plus. Lange's gold solution gave 5555554210. A diagnosis of general paralysis of the insane, cerebral type was made.

This lady was put on salvarsan treatment and received 0.6 gm. of neosalvarsan each on March 22, 1927; March 30, 1927; April 5, 1927; April 12, 1927, and April 27, 1927. Patient became more demented, would speak only occasionally and it was hard to state whether or not she was oriented. However, she often asked her husband to take her home. Apparently she recognized her husband and knew that she was not at home. She would smile often and seemed well satisfied.

This patient was kept on the Hospital Ward and watched closely on account of being pregnant. On May 8, 1927, at 11:30 A. M. without complaining of any labor pains or any indication of pain, while the patient was in bed, the membranes suddenly ruptured and in a few minutes a well formed baby boy was born. The placenta came about 30 minutes later. The placenta was thicker than normal and in places it had a kind of greyish tint. However, the entire placenta came without trouble. On examining the perineum it was found that it had a second degree laceration which was repaired and healed by first intention. Patient never had any elevation of temperature and in a couple of weeks was allowed to get up.

The baby weighed 8 pounds when born and was placed on artificial feeding. He took the nourishment well and was thriving. On May 23 the father of the baby took it and placed it with a cousin of his. It apparently is thriving well.

The mother also improved. She became oriented in all spheres, took interest in her surroundings, commenced to talk, and was finally paroled to her husband, who reports that she is doing well. When seen about 5 months after delivery she was neatly dressed and carried on a fairly well connected conversation.

Blood Wassermann done on the baby on October 6, 1927, was negative. The baby weighed at that date 13 pounds. The mother had a relapse and had to be returned to the Chicago State Hospital. At present she is quite demented, shows considerable muscle tremor and speech defect, characteristic of general paralysis.

December 23, 1927, the baby weighed 17 pounds and 8 ounces and was doing well.

The interesting parts in the case are that the woman suffered from a psychosis with con-

vulsions three years previous which in all probability was paresis, a good remission of three years duration without any treatment, a negative blood Wassermann with a positive spinal fluid test which is often the case in paresis, a diagnosis of psychosis with pregnancy which was made at the County Hospital, which is in keeping with views held by a good many physicians that paretic women do not become pregnant.

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## ABRUPTIO PLACENTAE

E. D. HUNTINGTON, M. D.

CHICAGO

The premature separation of the normally implanted placenta is a serious accident occasionally complicating pregnancy, and, because of its rarity, its possibility is often forgotten by the physician. It is well from time to time to recall the salient points of this and other unusual emergencies that they may not be overlooked. Every general practitioner should be prepared to recognize this tragic accident to the parturient woman; he is usually first to see the stricken patient; its early recognition and intelligent handling will save most of the maternal lives, whereas failure to recognize the condition will greatly jeopardize the mother and too often lead to her death.

Abruptio placentae is not of frequent occurrence, but reports from some large maternity hospitals give a surprisingly large number of cases. In a span of twelve months the writer has seen in consultation three patients with the tragic type of abruptio—two of them in the practice of one physician. Certainly every practitioner must be familiar with the outstanding symptoms and findings of this grave condition.

Clinically, abruptio falls into two types, the tragic and the non-tragic, with intermediate gradations.

*Non-Tragic Types.* The premature separation of the lower part of a normally implanted placenta is probably of fairly frequent occurrence, and accounts for many ante-partum hemorrhages, at or near term. (The hemorrhage from so-called "marginal placenta praevia" might very properly be classified under this group.) When this separation is marginal, especially if low, the blood easily courses between the fetal membranes and the uterine wall, and escapes at the cervix—



sometimes in alarmingly large amounts—but does not act, by accumulation, to further increase the separation unless the presenting part blocks the cervix. When the blood escapes, and does not accumulate, conditions are favorable for a normal cessation of the hemorrhage. Expectant treatment, without packing, is indicated, transfusing if necessary, and normal delivery can be expected to follow. But blocking the outlet with pack or bag converts it into the tragic type, unless a windless type of abdominal binder is jointly employed as noted later.

From the above considerations it should be borne in mind:

1. That ante-partum hemorrhage does not necessarily mean placenta praevia, although too often such is assumed to be the case.

2. Abdominal section for non-tragic abruptio is usually unnecessary and undesirable.

3. Packing for the hemorrhage of non-tragic abruptio does not check the hemorrhage (unless done according to the Dublin method) but merely conceals it, the accumulating blood causing progressive separation of the placenta, and a non-tragic abruptio is converted into a tragic abruptio.

4. Differential diagnosis is sometimes difficult if vaginal examination is alone relied upon as blood clot in the cervical canal has been frequently mistaken for placenta.

5. Incorrect diagnosis will lead to dangerous treatment.

*Tragic Types.* In tragic abruptio the treatment is radically different, and the prognosis far less favorable. When the separation and hemorrhage are central, or when the cervical outlet is blocked by the presenting part, or by ill-advised packing or bag, the accumulated blood acts to increase the separation; increasing separation maintains and increases the bleeding, and so the vicious cycle begins and progresses, and the situation takes on an alarming aspect that demands the maximum of judgment, skill and courage on the parts of the attendants.

*Diagnosis.* Non-tragic abruptio must be differentiated from placenta praevia, especially the central type; the presence or absence of placenta across the cervical outlet determines the diagnosis.

Frank tragic abruptio is readily recognized if

the physician be only familiar with the condition. The woman at or near term quite suddenly develops severe uterine pain (not labor pains), the abdomen becomes rigid and increasingly distended, the uterus is distended and uniformly tender, and within a few hours the patient is in shock; vaginal bleeding may be present or absent. The increasing distention of the tense and tender uterus is usually apparent but is better determined by caliper measurements from fixed bony points to the navel. The uterus exhibits tonic contraction without relaxation. When external hemorrhage is absent, pushing up the presenting part will sometimes afford a gush of blood. Shock becomes more profound, the pulse feebler and more rapid, and respirations fast and shallow.

Briefly, frank tragic abruptio placentae presents a picture of a surgical abdomen plus concealed hemorrhage in a woman at or near term, and usually before the advent of labor. It needs only be differentiated from ruptured uterus—and the distended uterus of abruptio does occasionally rupture.

In ruptured uterus, many hours of severe labor usually precede shock and hemorrhage; often there is a history of Cesarean delivery. In ruptured uterus, the fetus can usually be felt outside the uterus, which is contracted, hard and relatively small, as contrasted with the enlarging, tender and uniform uterus of tragic abruptio.

In placenta praevia, the symptoms of surgical abdomen are lacking; hemorrhage is the first symptom; shock is a late symptom and follows an extreme loss of blood externally; abdominal pain is absent—excepting labor pains; the uterus is not tense, tender or distended; rigidity is lacking.

*Etiology.* Definite toxemia is evident in most patients with abruptio and is usually regarded as the most important predisposing cause; vascular changes lessen the cohesive properties of the placenta and favor premature separation. Violent uterine contractions, stimulated by blows on the abdomen or by violent muscular acts of the mother probably actually initiate the separation. Patients commonly trace the onset of the symptoms to recent external violence such as a fall or blow on the abdomen.

*Treatment.* Prophylaxis is suggested by a

consideration of the etiology: prenatal observation and regulation will probably do much to prevent this accident.

The milder types where hemorrhage is the only prominent symptom usually need no interference other than possible transfusions for excessive loss of blood. As long as the blood does not accumulate in the uterine cavity, there is little to fear for the mother and frequently a viable child is delivered. Packing or the insertion of a bag are dangerous as thereby the cervix is blocked, drainage is stopped, and blood accumulates in the uterine cavity, converting the case into the tragic type. Supplementing these questionable procedures with a tight abdominal binder of the Spanish windlass type and ample dosage of morphin are however the treatment of choice with some obstetricians.

In tragic abruptio, the treatment of choice is determined largely by the condition of the cervix:

1. Dilated cervix: Delivery by forceps or version and extraction can be accomplished; manual removal of the placenta should follow immediately. Shock will be aggravated by the sudden emptying of the distended uterus, and must be appropriately treated.

2. Effaced cervix without dilatation: Here again vaginal delivery is justifiable, although in urgent cases the prompter abdominal section may be wisely selected. If vaginal delivery is elected, the membranes are ruptured to reduce uterine distention and a tight abdominal binder applied that will encompass the entire abdomen. Manual dilatation or stellate incisions of the effaced cervix will permit version and extraction; the placenta is immediately removed and shock appropriately treated.

3. Uneffaced cervix: Two radically different procedures are in favor with different schools of obstetricians:

- A. Cesarean section, either classical or cervical. If the uterine muscle and adnexa contain extensive extravasations, co-incident hysterectomy is advised by some authorities. It must be understood that section is performed wholly in the interests of the mother.

- B. Dublin method. The patient is heavily narcotized; the cervix and vagina are tightly packed with pledgets of cotton soaked in some

antiseptic solution; the greatest possible pressure is exerted on the uterus by combining a tight abdominal binder with a tight vulvar bandage. Uterine contractions are thereby inaugurated and stimulated, and hemorrhage is prevented. When the cervix is thought to be effected, the vaginal packing is removed; if effacement has resulted, manual dilatation is followed by version and extraction; if the cervix is not effaced, the vagina is repacked for an appropriate time. Immediate removal of the placenta and the treatment of shock are routine.

#### CASE REPORTS

Rose P. Italian housewife, 42 years old; para XII. Admitted to St. Francis Hospital, Blue Island, Ill., July 13, 1925, in shock. T. 98, P. 120, R. 44. Near term and suffering severe abdominal pain. No exact history was obtainable. The uterus was distended, tender and persistently contracted; no external hemorrhage; cervix uneffaced. Immediate Cesaesan section was advised, but refused by husband. Shock became progressively deeper. A Barnes bag was inserted and a tight abdominal binder applied. Patient died 11 hours after admission and 6 hours after insertion of bag, but before dilatation was accomplished. It is probable the woman's life would have been saved by a prompt Cesarean.

Lucian G. Italian housewife, age 24 years, para II. Admitted to St. Francis Hospital, Blue Island, Ill., Feb. 7, 1926. P. 100, T. 99, R. 22. Near term. Profuse sudden vaginal hemorrhage was followed by severe generalized abdominal pain. Uterus was very tender, persistently contracted, and apparently distended; cervix not effaced. Symptoms of shock developed within an hour of entrance to hospital (hemorrhage from vagina had stopped) and classical Cesarean performed three hours after admission. Peritoneal cavity contained many large clots; uterus was rotated clockwise with left broad ligament presenting in laparotomy wound; blood exuded from fimbriated ends of both tubes; extensive extravasations into broad ligaments and uterine muscle; uterus tense and distended. When uterus was incised, placenta floated out of wound (having become completely separated) in a great quantity of bloody fluid and clots; dead female fetus. Hysterectomy considered, but not performed. Uterus closed; abdomen closed without drainage. Patient ran a moderately septic course and left hospital on 20th day. Repeated urinary examinations evidenced chronic nephritis.

H. P. American housewife, age 24 years old, primipara. Entered Roseland Community Hospital, June 21, 1926, complaining of severe abdominal pain, and in moderate shock. She was 8 months' pregnant, and had exhibited pernicious vomiting in the first 3 months, and pyelitis and nephritis throughout the pregnancy. Sudden pain felt in abdomen while riding over rough



road, followed by constant abdominal pain and slight vaginal bleeding. Diagnosis of abruptio placentae. Prominent obstetrician performed cervical Cesarean; male child revived with prolonged artificial respiration, but lived only 4 hours. Patient made good recovery.

10450 Prospect Avenue.

## THE MECHANISM OF THE D'ESPINE SIGN: ITS SIGNIFICANCE IN TRACHEOBRONCHIAL GLAND TUBERCULOSIS

MINAS JOANNIDES, M. S., M. D., AND  
HARRY H. FREILICH, M. D.

CHICAGO

The D'Espine sign as originally interpreted by its discoverer<sup>1</sup> is a quality (Timbre) added to the voice which may cause whispering (chuchotement) in the first stage and bronchophony in a more advanced stage. E. A. Gray<sup>2</sup> refers to the sign as the "whisper concomitant" of the spoken voice while Morse<sup>3</sup> considers it as the "whispering sound following the spoken voice." D'Espine laid a great emphasis on the diagnostic value of the sign. He states that "the first signs of bronchial adenopathy are furnished exclusively by the auscultation of the voice, and are found almost always in the immediate neighborhood of the vertebral column between the 7th cervical and the first dorsal, sometimes in the fossa "sus-epineuse," sometimes in the interscapular space.

Our interest in the sign was aroused by a constant finding during the auscultatory examination of chests. We noticed that with the head bent forward so that it almost touched the chest and the shoulders bent forward so that they were on a line with the knees the voice and whisper sounds could be heard at a lower level than with the head and shoulders in the erect position. This observation aroused our doubts as to the value of the D'Espine sign, for diagnostic purposes. A careful study of the sign was therefore made in a series of thirty patients. From the anatomic standpoint W. S. Miller<sup>4</sup> noted that the bifurcation of the trachea seldom goes below the fifth dorsal vertebra and never as high as the 7th cervical even during fetal life. Such being the case one would not expect to find any tracheobronchial glands below the level of the fifth dorsal. Sieniewicz<sup>5</sup> studied 395 children. His findings are also similar to those of Miller. He

found the bifurcation of the trachea in the infant at the level of the 7th cervical vertebra. By the 10th year it reaches down to the 3rd dorsal. When adult age is reached the bifurcation is as low as the 4th or 5th dorsal vertebra. When we auscult the chest, however, we notice that the sounds referred to as the "sign" may at times be heard down to the tenth dorsal vertebra. With the forward stooping position we have been able to elicit the sounds down to the sacrum.

On the basis of these findings we assumed that the whisper concomitant of the spoken voice when heard over the spinal column is not due to enlarged tracheobronchial glands. Our assumption is further re-enforced by the findings of the Committee on Medical Research of the National Tuberculosis Association. In a study of twenty-six children they found x-ray evidence of adenopathy in three children that did not present the D'Espine Sign. On the other hand, in twenty-three children there was a positive D'Espine without any corroborative evidence on x-ray examination.

What then is the significance of the sign? Does it denote anything pathological or is it a blending of normal sounds? An analysis of the mechanism of these sounds may be of value. The whisper concomitant, like all other sound waves, depends upon, first, the force producing the sound; second, the tissues and objects that conduct the sound or interfere with the transmission of the waves and thus act as loads or absorbers; third, the receptive mechanism of the examiner. Thus, a whisper or voice sound may vary from time to time depending upon variations of any one or all three factors. In other words a child having a whisper concomitant on one day down to the second dorsal vertebra may show it at the 3rd or 4th dorsal during the following examination. Assuming that the examiner has the least variation in the perception of sounds, we must see what else may cause changes in the sound waves.

Voice sounds in man are produced by the contraction of laryngeal muscles and the compression of air from the lungs towards the outside. The variation in the shape of the mouth and the laryngeal muscles and also the degree of contraction of the laryngeal muscles will cause changes in the intensity, duration, timbre, and

pitch of the sounds. Bone is the best conductor of sound in the body, next, come all consolidated tissues, and, third, any hollow cavity containing air. Given a sound box such as the chest with the vertebral column to carry sound vibrations, and the hollow cavity between the teeth and the tracheal bifurcation, we are bound to have a very good transmission of voice sounds. The hollow buccal and tracheal cavity in which the voice sounds originate would naturally produce a whispering sound at the end of the voice sound. Such a sound may also be heard when one listens over the trachea anteriorly. With the trachea in fairly close apposition to the vertebrae we would expect to have a better sound transmission posteriorly. With the forward stooping position the bodies of the vertebrae most likely come in closer apposition to each other. Moreover the chest which acts as a resonator is placed in such a position that vibrations from the chest would strike the spine with the greatest intensity. The greater the chest resonance, the greater the intensity of voice sounds over the spine. Thus a patient with a diffuse fibrosis of his lungs would produce voice sounds of greater intensity. Under such conditions we noticed that the whisper concomitant of the spoken voice would reach the tip of the sacrum.

D'Espine claimed that this sign is one of the earliest signs appearing with the enlargement of tracheobronchial glands. During the early stages of glandular enlargement one would expect very little if any fibrosis or calcification. Therefore it would be natural to expect these glands to act as loads and absorbers rather than as conductors. One then should expect the absence of the sign during the acute pathology in the bronchial glands.

A careful study of thirty consecutive children convinced us that the "sign" is of no clinical significance when present. The sign could be elicited at various levels of the spine and in the forward stooping position the sign could be elicited

at a much lower level. That the standard of perception is variable in different persons and also at different occasions in the same examiner has been emphasized in our minds during this study. More than once there was a difference of opinion as to the quality, level and intensity of the sounds in a given patient.

#### CONCLUSION

We may be reasonably sure from our study of the sign, that the sounds referred to as the D'Espine sign are a normal blending of voice and whisper sounds that follow the natural path of transmission of sound waves. The presence of the D'Espine does not seem to indicate tracheobronchial gland pathology. With the forward stooping position the sound waves in the chest become intensified.

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#### A NEW URETHRAL DILATOR

LUCIUS H. ZEUCH, M. D.

CHICAGO

To obviate trauma to small meatuses incident to passing large sounds for stricture of the urethra, a device, illustrated in the subjoined plates, is offered. This may be passed through a stricture as easily as a metal catheter and there enlarged to the diameter of a number 30

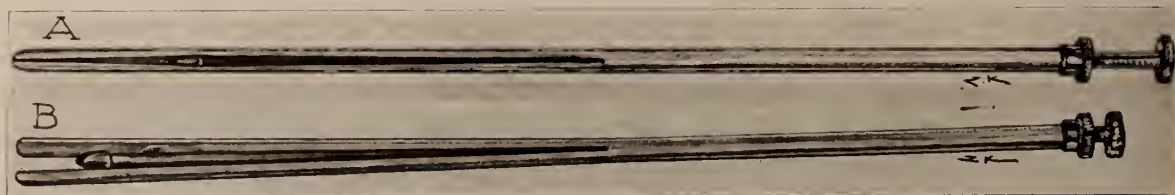


Fig. 1. A—Closed to allow insertion into contracted Meatus. B—Open to dilate strictures.



French bulb sound by means of a screw head at its proximal end. It then may be rotated in situ and withdrawn a few inches toward the meatus, then closed by reversing the rotation of the screw head, thereby restoring the original calibre, and taken out without damage to the meatus or its mucosa.

I am indebted to V. Mueller & Company for perfecting the mechanics of the instrument.  
3014 Fullerton Avenue.

## A REPORT OF TWO CASES OF TULAREMIA IN CHICAGO

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and

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CHICAGO

Only in recent years has tularemia been recognized as a distinct disease. Instances of this type of infection are being constantly recorded from all parts of the country. In New England, Wisconsin and Washington the disease has not yet been reported. Up to July 31, 1928, according to the U. S. Public Health Service, there have been 28 cases reported in Illinois. The two cases cited in this paper are the sixth and seventh observed in Chicago; an eighth case was seen at the Belmont Hospital. In a recent article Francis<sup>1</sup> refers to a series of 679 case reports, but there are more on record. As time goes on and the disease is more often recognized it will cease to be regarded as an unusual malady, and reports of individual or small groups of cases will not be in order. At present, however, its exact distribution and incidence is not fully appreciated, especially by the general practitioner who sees the majority of these patients. For this reason further recording of cases is of interest and serves to emphasize the increasing necessity of keeping this disease constantly in mind when differentiating types of acute lymphangitis and adenopathy accompanied by constitutional symptoms.

Tularemia is a specific infectious disease caused by *B. tularensis*. It is primarily a disease

of wild rodents but has been transferred to man by certain infected blood-sucking insects, or direct contamination by material from infected animals. The specific organism was first observed by McCoy in 1911 in the California ground squirrel (*Citellus beecheyi*-Richardson) and has been repeatedly found in different species of wild rabbits (*Sylvilagus*, *Lepus*, *Lepus bairdi*). Wild rats and in two instances wild mice have been observed to harbor the disease. According to Francis the blood sucking insects that transmit the disease from one animal to another and from animal to man are the horse fly (*Chrysops discalis*), and the ticks (*Dermacentor andersoni*, *Stilis*, and *Dermacentor variabilis*). Direct contamination accounts for the majority of the cases in man and hence the explanation for its high incidence in marketers, meat handlers, cooks, etc., whose duties include the preparation of rabbits for cooking. The patient may or may not have been conscious of an open skin lesion or abrasion on the hands or arms when he came in contact with the infected carcasses. Experimentation<sup>2</sup> has shown that the micro-organisms may pass through the intact skin of guinea pigs. There is no instance on record of transmission of the disease from man to man, directly or indirectly.

Four clinical types of tularemia, all with constitutional symptoms, are recognized. First, the ulcero-glandular, in which there is a primary papule, and later ulcer, at the site of inoculation and enlargement of regional lymph nodes which may suppurate. The second type, known as the oculo-glandular, is characterized by a more or less severe conjunctivitis due to primary infection in the conjunctiva and enlargement of regional (cervical) lymph nodes. In the third type, known as the glandular, there is enlargement of regional lymph nodes unaccompanied by a primary lesion. The fourth type, or typhoid form, is the most unusual and presents no primary lesion or adenopathy, but instead marked prostration and fever. The diagnosis is not made until typhoid fever has been ruled out and agglutination tests are made in due course of time; or unless prior to this the patient dies and the characteristic lesions are observed at autopsy.

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The pathology of tularemia is distinct but not specific.<sup>2</sup> The primary ulcer, when present at the point of inoculation, shows diffuse necrosis of tissue about which polymorphonuclear leucocytes and lymphocytes aggregate in large numbers. In the regional lymph nodes there is inflammatory hyperplasia and areas of caseation necrosis surrounded by endothelial leucocytes, lymphocytes and fibroblasts (depending on chronicity) with occasional giant cells of the foreign body type. Fatal cases have shown foci of necrosis in the liver and spleen and hyperplasia of the reticulo-endothelial elements in the liver. Small areas of necrosis on the pleural surfaces of the lungs, as well as small patches of broncho-pneumonia, have also been observed.

The laboratory diagnosis in tularemia is extremely satisfactory since it affords specific tests. Material from infected animals, or from incised suppurating lymph nodes in man, may be injected subcutaneously into the groin of guinea pigs or rabbits. These die within a week. Autopsy may show inflammatory hyperplasia of regional lymph nodes, but always the liver and spleen are covered with small whitish spots. On microscopic examination these correspond to areas of focal necrosis surrounded by relatively little infiltration by leucocytes. Recovery of the specific organisms from these animals is possible but requires special methods.<sup>1</sup> Danger of contracting the disease by the laboratory workers is very great.

The serum of tularemia patients contains specific agglutinins. These appear about two weeks after the onset of the disease and increase up to the seventh week when there is a gradual decline in the titre. Specific agglutinins probably never entirely disappear. Cross-agglutination with *B. abortus* and *B. melitensis* occurs, but the higher titre for *B. tularensis* usually makes the diagnosis clear.

The ulcero-glandular type is the most common form of the disease. The following two case histories afford good examples:

Case 1. R. M., Japanese restaurant keeper, male, aged 40, single, came to the hospital December 3, 1928, complaining of a cutaneous ulcer medial to base of right thumb nail present since November 24, and of painful swollen right epitrochlear lymph node. On November 22 he and G. O. (see below) skinned and cleaned 44 rabbits. On November 24 hyperemia and



Fig. 1. Case 1. R. M. Primary lesion of tularemia at basis of right thumb nail.

pruritis developed on right thumb lateral to the nail. This subsequently became more noticeable and on November 26 general malaise, chills, fever, nausea, headache, weakness and vertigo developed. Swelling and pain in right epitrochlear region also was noted. These symptoms persisted for the next two days and in addition a red streak extending from right thumb to right epitrochlear gland was present. Family and past personal histories were irrelevant. Physical examination revealed an irregular cutaneous ulcer about 4 mm. in diameter lateral to right thumb nail and surrounded by considerable redness and induration. The edges of the ulcer were rolled, its crater moist, roughened and dark red. There was an ovoid swelling about 6 cm. in diameter in the region of the right epitrochlear lymph node. This was firm at the periphery but fluctuant in the center and tender. The skin over it was



Fig. 2. Case 2. G. O. Primary lesion of tularemia at base of right index finger.



hyperemic. A red streak extended from the base of the thumb up the forearm to this swelling. Axillary lymph nodes slightly enlarged, but not tender. Hg. 85 per cent., W. B. C. 9,200, polys. 83 per cent., lymph. 30 per cent, eosin. 1 per cent, mononuclears. 9 per cent. Urine negative. Temp. 101.4 degrees, pulse 92, Resp. 20. Wassermann 4+, Kahn 4+. Diagnosis: Probably tularemia. On December 6 right epitrochlear swelling was incised with liberation of a few cubic centimeters of thick yellow pus and much necrotic tissue. By December 14 pain developed in right axilla, but no increase in size of lymph nodes was noted. The course of the disease was henceforth uneventful except for development of folliculitis on right wrist and forearm which cleared up under usual treatment. Patient was discharged January 11, 1929. The epitrochlear incision was healed, and a small area of hyperemia persisted at the site of the primary ulcer on the thumb.

Case 2. G. O. This patient, a Japanese, male, single, 44 years of age and also a restaurant keeper, was admitted with RM., complaining of a red swollen area on medial aspect of proximal phalanx of right index finger, and of painful and swollen epitrochlear and axillary lymph nodes. On November 22 he aided R. M. in dressing 44 rabbits. On November 26 he dressed an additional 15 rabbits alone. About 1 o'clock the next morning he was awakened by pain in the right axilla and experienced a chill which lasted two hours. The next morning he noted swollen right axillary and epitrochlear lymph nodes and a painless, raised, firm, red area about 4mm. in diameter on the lateral portion of the proximal phalanx of right index finger. In the center of this was a small white spot which the patient pricked with a pin, extracting a small "globule" of "fatty" material but no pus. For two days the patient was very weak, nauseated, and dizzy. By November 29 the right axillary and epitrochlear lymph nodes were much more tender than previously. On admission physical examination revealed: 1. pupils that reacted sluggishly to light, 2. heart slightly enlarged transversely with systolic murmur over precardium and soft diastolic murmur in left 3rd and 4th interspaces, 3. enlarged painful right axillary and epitrochlear lymph nodes, 4. firm, red, raised spot 4 mm. in diameter on medial aspect of first phalanx of right index finger, in the center of which is an oval excavation with deep red granular base. Temp. 101, pulse 102, resp. 22, W. B. C. 13,300, polys. 63%, lymphs. 30%, eosin. 1%, mononuclears. 6%. Urine negative. Wassermann 4+, Kahn 4+. Diagnosis: probably tularemia. By December 8 right epitrochlear gland had become fluctuant and was incised and drained with liberation of a few cubic centimeters of thick yellow pus and much necrotic lymphoid tissue. On December 15 the axillary lymph nodes were very tender and fluctuant, and were also incised and drained. One of the superficial deltoid lymph nodes was also enlarged and painful but not fluctuant. On the fourth day after admission temperature was normal and remained so until patient was discharged on January 13, 1929,

with lesion on right index finger consisting only of a red spot, epitrochlear incision healed and axillary incision nearly healed.

The necrotic material and pus obtained at operation in the above cases was injected subcutaneously into the groin of four rabbits. Two died three days and two five days after inoculation. Only in one instance were the regional lymph nodes enlarged. The surfaces of the liver and spleen in each case were dotted with pin head sized whitish spots. Microscopic examination of sections from these livers showed small scattered foci of necrosis about which there was little leucocytic infiltration. Material curetted out of necrotic lymph nodes after each operation was also fixed in acetic-acid-Zenker's solution, embedded in paraffin, sectioned and stained by hematoxylin and eosin. Microscopic examination revealed lymphoid tissue in which there was marked inflammatory hyperplasia with extensive invasion of polymorphonuclear leucocytes. Areas of caseation necrosis were present, but due to the fact that the material was obtained by curettage the normal relationship of these areas to surrounding living tissue was destroyed, and hence it was not possible to observe a zone of endothelial leucocytes surrounding them, as described by others<sup>3</sup>.

The serum obtained two weeks after the onset of the disease was negative for agglutinations against *B. tularensis* (test performed by Dr. J. J. Moore). Serum obtained about four weeks later and sent to the Hygienic Laboratory of the U. S. Public Health Service, Washington, D. C., was positive for agglutination against *B. tularensis* in dilution of 1:640 in each instance, thus confirming the diagnosis of tularemia.

No specific treatment exists for tularemia. In the above cases hot, moist dressings were applied as indicated by the lymphangitis and adenitis. Incision, and drainage was performed when fluctuation developed in the affected lymph nodes. The patients were kept in bed until just before being discharged. Although, as said above, infection has not been transferred from man to man, the patients were isolated according to the technique of medical asepsis in infectious disease.

In Francis' 679 cases there were 24 deaths. Fatal cases are usually rapid and fulminant in course.

Both of the above patients admitted exposure to venereal disease. A history of chancre or secondary symptoms was not obtained in either case. The positive Kahn and Wassermann reactions were considered indicative of luetic infection, especially in G. O., the x-ray of whose chest showed an enlarged aortic arch (luetic aortitis?). Anti-luetic treatment was advised.

The authors wish to thank Dr. Lester R. Dragstedt for permission to report these cases.

## SYPHILIS OF THE PROSTATE

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Syphilis of the prostate gland is still considered a rare entity in medicine and urology and as a consequence the diagnosis is rarely made. Very few cases have been reported in the literature. Both old and recent text-books only touch upon the subject and dismiss it in a few words. The best discussion which may be found in a text-book is in Hazen's<sup>1</sup> "Syphilis," 1919, in which he discusses briefly the etiology, pathology, diagnosis and treatment.

Young's<sup>2</sup> "Practice of Urology," 1926, devotes one-half page to the subject, comments that the diagnosis is made on presumptive evidence as the lesions disappear rapidly on antiluetic treatment

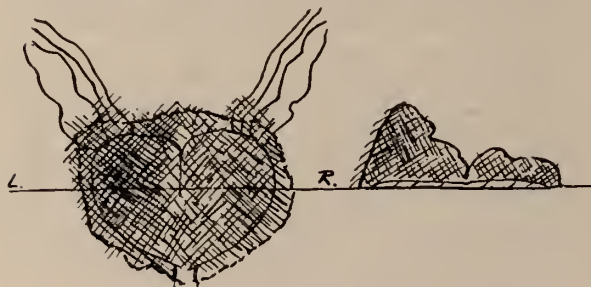


Fig. 1. Extensive involvement of lateral lobes, particularly the left, with enlargement, asymmetry, irregularity and induration.

and suggests keeping in mind commoner lesions such as prostatitis, adenoma, carcinoma and tuberculosis.

Chetwood's<sup>3</sup> "Urology," 1927, devotes one paragraph to the subject stating, "very little is known on the subject and is certainly rare." However, suggests antiluetic treatment and a Wassermann in cases of a hard nodular prostate in which the etiology is obscure.

Stokes<sup>4</sup> "Modern Clinical Syphilology," 1926, devotes four lines to the subject, stating the disease to be very rare and there were "no distinctive symptoms other than a chronic prostatitis." The therapeutic test and other collateral evidence form a basis for a clinical diagnosis.

Thompson<sup>5</sup> in 1920 reviewed the literature on this subject, adding one case of his own. He found twenty-four possible cases of syphilis of the prostate in the literature dating back to 1851 in which Ricord<sup>6</sup> reported a case in a young man who came to necropsy and was found to have had

ulcerations of the prostate and bladder. The lesions were of a phagadenic nature following a suspicious ulcer on the frenum. This is probably the first case of this nature which went to necropsy.

In 1918, Whartin<sup>7</sup> reported a case which was posted and gives an accurate microscopic description of a gummatus prostate. His case died as the result of an injury and had a history of a luetic infection two years previously. He describes the pathology as a plasma-cell infiltration primarily affecting the blood vessels and the stroma of the prostate, rather than periglandular and subepithelial as in a case of prostatitis. In fact the gland spaces appear to be decreased. The larger areas of round cell infiltration contain numerous giant cells with no evidence of necrosis resembling gummata. Spirochetes were demonstrated in these sections.

McDonagh<sup>8</sup> reported a case of syphilitic prostatitis in 1922 occurring in course of florid secondary lenticular syphilide which improved on four injections of salvarsan. Another case was added to the literature in 1924 by Starry<sup>9</sup> in a man of 73 who had prostatic enlargement. A two-stage prostatectomy was performed with an uneventful recovery. Spirochetes and syphilitic changes in the prostate were found.

Salleras<sup>10</sup> in 1925 reviews the literature and reported twenty-eight possible cases of syphilitic prostatitis adding a case of his own in a man, age 55, who had severe prostatic symptoms which were relieved by antiluetic management. His case was diagnosed originally as carcinoma.

## Report of Author's case:

Admitted Cook County Hospital, June 2, 1927 on urological service.

A. S. Male—aged 47 years.

Complaint: Nocturia 2 to 4 times a night. Frequency every hour during the day. Difficulty in starting stream, duration 1 month. Inability to urinate, duration 4 days.

Patient stated he had no previous urinary disturbances except occasional nocturia for years.

Past history:

Gonorrhea—20 years ago, chancre denied.

Family History—Negative.

General Physical Examination; well nourished male patient not acutely ill. T. 99.4, P. 80, R. 20. B. P. 120/80. Blood count normal. Bladder distention 4 fingers above symphysis pubis, atrophy of left testicle, small swelling on globus major of left epididymis.

Rectal Examination; enlarged, irregular, nodular prostate, with infiltration extending well up between the seminal vesicles.



Laboratory Findings; urine, acid, sp. gr. 1028, albumin 1x pus cells 3x. P. S. P. 40% in 2 hours; blood chemistry: urea N. 20.00, creatinine 1.70.

Diagnosis; carcinoma of prostate.

Treatment, put on T. i. D. catheterization.

Cystoscopy 6/6/27 revealed vesical neck deformity of lateral lobe prostatism with edema of vesical neck and trigone. Rectal examination with instrument in place showed the median groove to be free. The lateral lobes, especially the left, felt hard and indurated. Cystoscopic impression was a small fibro-adenoma with acute infection.

Wassermann 6/7/27 4xxxx.

On 6/7/27 patient was put on antiluetic treatment and on 6/18/27 his residual urine dropped to 1½ ounces and was voiding spontaneously.

Rectal examination at this time revealed softening of previous infiltrations with rapid disappearance of the irregularity.

Recystoscoped 6/20/27. Residual urine 1 ounce. The bladder picture had markedly improved. The infectious changes and edema had disappeared.

6/23/27, no urinary complaints except nocturia 1x.

6/25/27, patient discharged; residual urine ½ ounce, prostate symmetrical and almost regular in outline.

Follow-up Examination.

2/23/28, Residual urine ½ oz., prostate was normal size but slightly infiltrated. Repeat Wassermann refused.

The signs and symptoms of syphilis of prostate are not characteristic. The age incidence is usually from 40 to 60 years of age. Urinary disturbance simulating a chronic prostatitis are usually found, with or without a urethral discharge. Discomfort in perineum and rectum, vesical neck irritability with frequency, burning, nocturia and difficulty may be present. Occasionally hematuria is found in cases in which there is an acute posterior urethritis. Varying amounts of residual urine are always present. Complete retention occurs occasionally. The pain may be referred to the back, penis, perineum or down the legs.

Rectal examination usually reveals a prostatic enlargement, irregularity asymmetry, and prostatic or periprostatic infiltration which may extend up between the seminal vesicles and along the posterior wall of the bladder. Most cases reported showed marked enlargement of the right lobe. In the author's case the left lobe was more involved than the right.

The diagnosis is usually not made and carcinoma is frequently suspected. A diagnosis should be thought of in cases which are of the carcinomatous age, give a history of a specific infection

or present other findings of syphilis. Other points valuable for diagnosis are: 1, marked irregularity and enlargement of the prostate out of proportion to the signs and symptoms of a prostatitis; 2, its chronic course; 3, concomitant usual good health. The Wassermann is usually positive.

The prognosis is good on antiluetic treatment.

#### CONCLUSIONS

1. Only about 29 cases are reported in the literature as possible syphilis of the prostate.

2. The prostate is probably more frequently involved inasmuch as syphilis attacks all tissues of the body.

3. The diagnosis must be thought of when other clinical pictures are indefinite, particularly when other signs of syphilis are present.

4. Routine Wassermann examination should be made on all cases of middle aged prostatitis.

5. The therapeutic test usually reveals marked clinical improvement.

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## ARTIFICIAL FEVER PRODUCED BY HIGH FREQUENCY CURRENTS

### PRELIMINARY REPORT

From the Department of Neuro Psychiatry and Physiotherapy, Northwestern University Medical School and Cook County Psychopathic Hospital.

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The work of Binger and Christie has shown that a temperature rise in the living tissue of animals can be produced by means of high frequency currents. They have also indicated that a slight rise in the general body temperature of animals has accompanied such experiments. It

was our problem to determine whether a rise of 5-7 degrees F. could be produced in animals and man without injury to the subject. The end idea being to apply such artificial fever production to the treatment of general paresis and other infectious and chronic diseases.

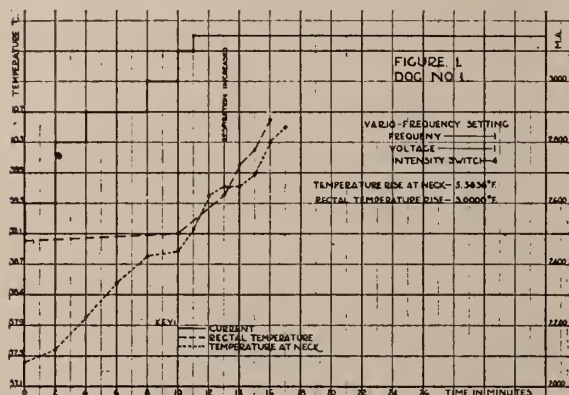


Fig. 1. Dog No. 1. Abrupt rise in temperature both in neck tissues and rectum to 40.6° C. Death through tissue coagulation four days later.

The work of the above quoted authors concerned itself more with the general physiological viewpoint, while we were entirely concerned with raising body temperature to a desired level without tissue destruction. Binger and Christie have shown also that high frequency currents penetrate living tissues.

Our experiments were performed on dogs and men using a well known high frequency generator for the production of diathermy. Currents varying from 1000 to 4000 milliamperes were used.

Fourteen animals were used in our early experiments. Of these the first four died during the experiments or within the two following days. Postmortem examination showed coagulation of the tissue extending to a greater or less depth in the direct path of the current. Since the electrodes were uniformly applied to opposite sides of the abdomen and thorax this cooking of the tissue embraced the deep muscles of the back, the muscles of the abdomen and in some cases also caused a hemorrhagic exudate into the abdominal cavity. The internal temperature of some of the animals posted at death was so high that the operator could not bear to place the gloved finger under the loops of the intestines.

The department of pathology of Northwestern

University Medical school will shortly publish a report on the macro and microscopic findings of the brain and spinal cords of these animals.

After these preliminary failures we slowly learned our mistakes. Too much current had been applied too rapidly. The next dog lived but showed extensive skin burns. We then began to enlarge our electrodes, using metal mesh instead of metal foil. Our animals lived longer, nevertheless there were two fatalities due to skin burns and coagulation. We were still in too great a hurry and pushed the current too much.

Next we changed our electrode to spongiopiline and stopped shaving the dogs. Since then all our dogs have lived with the exception of one ether death. In dogs a peculiar body condition exists which does not appertain to man. Dogs do not perspire. The electrode must therefore be kept wet in order to make a good conductor, otherwise burns result. Mesh electrodes and minute skin abrasions produce burns due to sparking and the lessened resistance of the area.

The size of the electrode must be equal and the distance between the electrodes as uniform as the contour of the subject permits. A large electrode on one side, a small one on the opposite side will probably produce burns under the smaller electrode. This is due to the greater density of current. About 100 square inches of

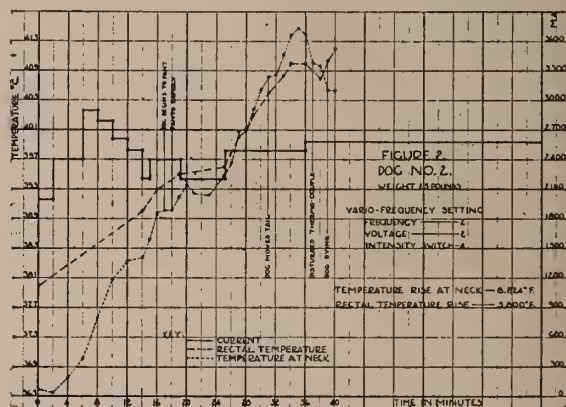


Fig. 2. Dog No. 2. Abrupt rise in temperature to 41.5° C. Rectal and tissue temperatures are finally equalized. Animal died.

spongiopiline for each electrode is sufficient for a forty pound animal.

With this we were able to apply 2500 milliamperes without injury. This approximates 25 to 30 milliamperes per square inch of electrode surface. The fatter and rounder the dog is the



more current can be applied per square inch without injury. The dogs averaged 6 inches in thickness. In man averaging double this in thickness more amperage can be applied per square inch. This is also due to better contact because of the perspiration response of the skin. We intend to give more accurate details in a future paper.

*Procedure:* The dogs were anesthetized, a thermocouple introduced into the deep muscles of the back and at right angles to the current or else into the deep muscles of the neck. In some experiments two thermocouples were used, one in each location. This procedure makes it possible to avoild the danger of coagulating the tissues beneath the electrodes. The galvanometer deflection method was used in recording the temperatures.

Rectal temperature was taken with the usual clinical thermometer. Respiratory rate was taken in a few experiments. In the majority of the experiments readings were taken every two minutes.

The dogs were shaved until we found this to be an error owing to the impossibility of shaving the animal without some skin abrasions.

Electrodes used were first metal foil, then metal mesh, and later spongiopiline. There is still much room for improvement in electrode application in animal experimentation. Elec-

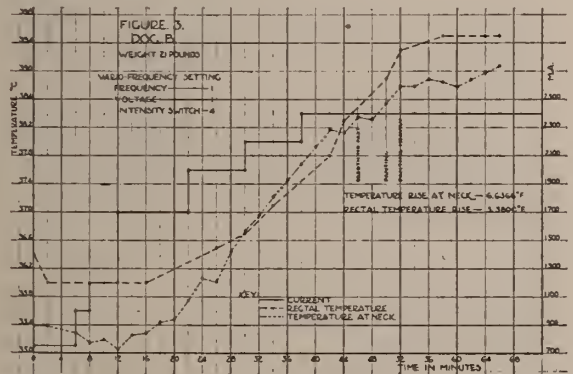


Fig. 3. Dog B. Gradual rise to 39.5° C. both in neck tissue and rectum. Animal lived.

trodes must be kept saturated with sodium chloride solution approximately of 2 per cent. concentration.

The current was raised gradually to a maximum to produce the desired temperature rise. By the use of a calibration chart the actual tem-

perature in the region of the thermacouples could be readily secured.

The first curve, Fig. 1 (Dog 1) shows the result of too intense application of the current. The rise in temperature is very abrupt and proceeds to the coagulation point of the tissue. The

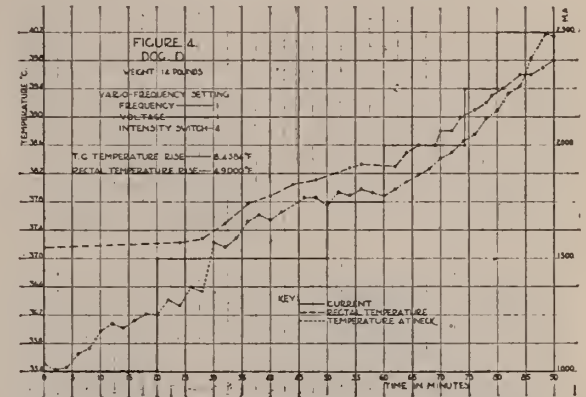


Fig. 4. Dog D. Gradual rise to 40.2° C. Animal lived.

time for a rise of 5.5 degrees F. was only 17 minutes. The dog died four days later. Thirty-one hundred and fifty milliamperes were used on a surface of fifty-five inches or fifty-seven milliamperes per square inch of dog weighing 14 lbs.

The second curve, Fig. 2 (Dog 2) shows a similar state of affairs. A rise of 9 degrees F. was reached in 40 minutes. In both curves a difference in the rectal and muscle temperature is noted at the start. These temperatures tend to approach each other as the rise occurs until the muscle temperature approximates that of the rectum. This dog died during the experiment and at this moment an abrupt rise of the rectal temperature is seen. The weight of this dog was 25 lbs.

The graph of the first dog which lived is shown in Fig. 3 (Dog B). The time consumed was now 66 minutes the maximum current was 2400 milliamperes and the current per square inch was 43 milliamperes. Extensive skin burns resulted because of the direct arcing through the interspaces of the mesh electrode.

The next graph, Fig. 4 (Dog 4), a light dog, weight 14 lbs. shows a gradual rise in temperature over a period of 90 minutes with a gradual increase in current from 1000 to 2500 milliamperes. A maximum of 45 milliamperes per square inch was used. This was the first animal

on which spongiopilene was used. This was kept fairly wet. At the date of this report the dog is still alive and has recovered from a slight skin burn in fold between the right knees and abdomen.

Figs. 5 and 6 show the graphs of our two

inches wide separating the two electrodes. Both these animals are alive and the last one shows no effects of the treatment whatsoever. In this animal 35 milliamperes per square inch of electrode were applied.

In Figs. 7 and 8 we submit our final graphs.

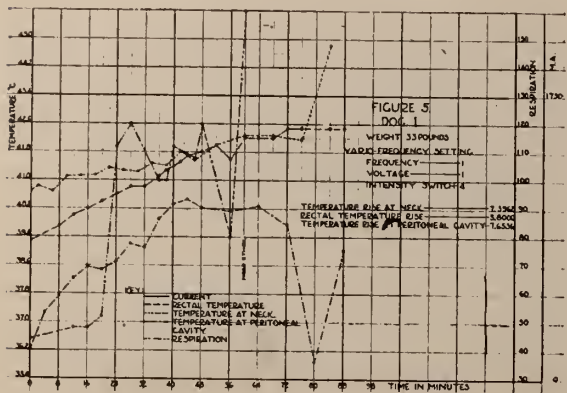


Fig. 5. Dog I. Temperature rise to 44.4° C. in neck tissues, corresponding to sudden drop in temperature of peritoneal cavity. Animal lived.

final experimental animals. Dog I shows an interesting and unexpected result. One thermocouple was placed in the peritoneal cavity while the other was inserted in the deep muscles of the neck. A sudden drop in peritoneal temperature occurred at the seventy-second minute corresponding to an equally abrupt rise of the neck temperature. This would seem to indicate a readjustment of the circulatory temperature load. Fig. 6 shows a typical rise in temperature in a large dog, weight 37 lbs. Here the electrodes

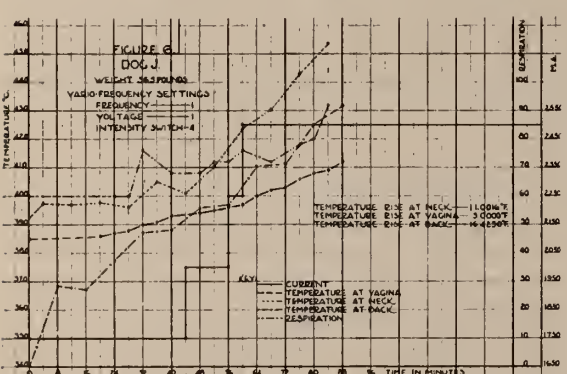


Fig. 6. Dog J. Gradual rise in temperature to 45.4° C. in neck tissues. Corresponding rise in muscles of the back and in the vagina. Animal lived.

had been enlarged to cover practically the entire body of the dog with the exception of the extremities, neck and head and a strip about 4

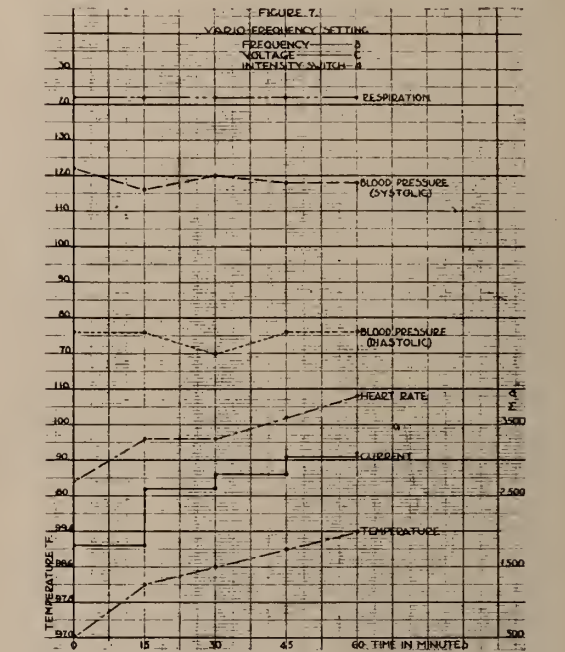


Fig. 7. Normal individual given up to 3000 milliamperes through chest and back, without insulation, for one hour. Temperature rise of 2.4° F.

Fig. 7 is of a normal individual who was treated without heat insulation through the ordinary metal electrodes. A rise of 2.4 degrees is re-

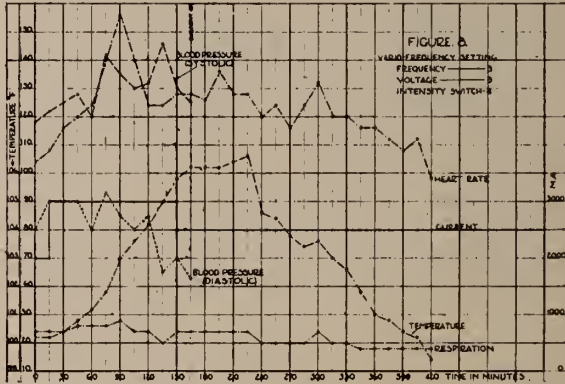


Fig. 8. Case of General Paresis. Given up to 3000 milliamperes through chest and back. Patient insulated with blankets. Rectal temperature rose to 106.1° F. in 2 hours and 15 minutes. After current was cut off a further rise to 106.6° F. was noted. Systolic blood pressure rose, diastolic fell. Temperature normal 4 hours and 15 minutes after treatment had ceased



corded. The electrodes are now in the process of improvement and with them any temperature desirable can be obtained. Fig. 8, shows the temperature rise of 6° F. secured in a case of general paresis, the patient being still under treatment. We are not yet in a position to report on the clinical results of treatment. We have treated several patients with general paresis and intend to apply this method to the treatment of primary syphilis and various acute and chronic infectious diseases.

#### CONCLUSIONS

1. Fever can be produced by high frequency currents.

2. Dangers from this form of treatment are encountered by too great and too sudden a density of current and improper contact between the body and the electrodes. These dangers can be largely overcome by perfected technique.

3. However, there may be another danger which cannot be obviated. The anatomical structure between the electrodes may be such that high densities of current are obtained causing probable high local rises in temperature. Whether these rises are above physiologic limits further experiment must determine.

We wish to extend our thanks to Mr. H. J. Holmquist, B. S. (M. E.) Secretary of the Council of Physical Therapy for his assistance in some of the physical problems.

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#### THE CAUSE OF URINARY RETENTION WITHOUT PROSTATIC HYPERTROPHY\*

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A man may have all the cardinal urinary symptoms of prostatic hypertrophy and yet have a normal sized prostate gland. This condition has been termed by French writers as *prostatism sans prostate*, which means that the entity pros-

tatism may exist without a demonstrable prostatic enlargement. This seeming anachronism was first discovered by surgeons, who having diagnosed prostatic hypertrophy on the basis of urinary retention, were dismayed, on opening the bladder, to find no evidence of prostatic tumor. In fact, very often, the prostate was smaller than normal.

This finding of a small atrophic gland gave rise to the view that atrophy of the prostate was a pathological condition, just the opposite of hypertrophy. Such small hard prostates were supposed to be the cause of many troublesome urinary symptoms and were more difficult to

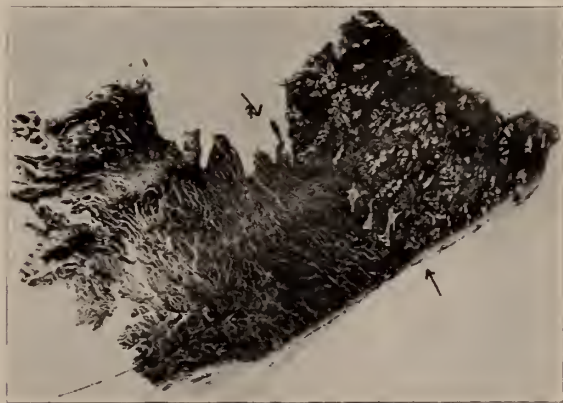


Fig. 1. Photomicrograph showing apex of prostate and bladder wall. Arrows indicate boundary of prostate. Note absence of capsule; also, sharp division between prostate and bladder musculature.

remove than enlargements. The first case of this type was reported in 1830 by Guthrie, an English surgeon, who performed an autopsy on a patient who died from urinary retention due supposedly to prostatic hypertrophy. Examination of the bladder revealed an elevation of the tissue at the bladder outlet, which he termed "a bar at the neck of the bladder."

Between the years 1835-1840 three pioneer French urologists, Etiolle, Mercier and Civiale, wrote on the method of diagnosing and treating obstructions at the bladder neck. Mercier claimed the cause of obstruction was a "valvule," while Civiale applied the term "barrier." The German school wrote on atrophy of the prostate. Ciecchanowski (1890) championed the view that primary atony of the bladder muscle, caused the urinary retention. Guyon (1889) termed the cases which fell into this category as *prostatisme vesical*. American urologists saw the necessity

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for adopting a clinical term which would serve to properly classify this group of cases and Chetwood (1901) introduced the title "Contracture of the Bladder Neck." Some years later, Young (1909) described a similar condition and called it "median bar."

In reviewing the various clinical descriptions, Randall came to the conclusion that all were writing about the same condition, differing only as to the causative factor. Why should nine different observers find as many pathological states to explain urinary retention. The answer is that each writer believed that any condition which could bring about a retention of urine must of necessity be a mechanical obstruction and each investigator searched until he could find some plausible explanation. The many illustrations which supposedly depict this condition are drawings, in which the artist has of necessity, incorporated the author's conception of a bar. Photographic evidence of pathological material to prove the commonly reported elevation at the bladder neck termed "bar," is lacking. In 1857, Sir Henry Thompson was somewhat dubious concerning the validity of the numerous reports of "bar formation" and searched the museum of the College of Surgeons to find illustrative material, but located only a single specimen. He states, "Nevertheless, although I have occasionally seen an example of the kind here described, it has been so infrequently, that I could not do otherwise than regard it as extremely exceptional, notwithstanding that Mr. Guthrie has expressed himself to the contrary."

What then is the cause of urinary retention when no prostatic tumor exists? To answer this question, it was first necessary to determine the relation of the prostate to the bladder sphincter and the emptying mechanism of the bladder. Here, I believe, lies the solution of this apparent enigma. Inflammation of the prostate may extend into the bladder muscle and so infiltrate it, that the sphincter is not able to normally open and close. A long existing prostatic infection may produce a sclerosis of the bladder neck. This is possible because the capsule of the prostate is incomplete and does not entirely surround it, as claimed by urologists, but is missing over the apex and base of the gland. Poirier, Charpy and Piersol call attention to this fact. To definitely prove this important point, I have sec-

tioned that part of the bladder wall adjacent to the prostate. Examining the microphotographs of this area, one can see the sharp termination of the prostatic gland cells and the adjacent bladder wall, without any intervening capsule. Infection of the prostate can extend directly into the bladder muscle. Seminal vesicle infections may affect the same result, by first involving the prostate. This infiltration of the bladder muscle, overlying the prostate, includes the internal sphincter, part of the trigone and adjacent muscle tissue. Urine in the bas fond region is the most difficult part of the bladder content to evacuate; it being necessary to force it out by contraction of the muscle beneath the trigone, assisted by the perineal muscles. If this portion of the bladder is unable to contract, urine will collect here, after micturition, and this constitutes the residual urine. Hence, we may have urinary retention without a mechanical obstruction.

The most important practical phase of this problem is the attempted removal by prostatectomy of the so-called urinary obstruction. Almost every surgeon has had the experience of trying to remove a prostate which was so adherent that it was impossible to establish a line of cleavage. After struggling for a considerable period, to remove the gland in its entirety, he finally removed as much as possible, piecemeal. Whenever such a condition was encountered, the surgeon often claimed that the adherence of the gland was due to carcinomatous process. He reasoned thus, because having made a diagnosis of prostatic hypertrophy before opening the bladder, any difficulty experienced in his enucleation could be due to only one thing—a malignant process, which causes the gland to adhere firmly to the capsule. Here again the error was made in trying to live up to a diagnosis. If surgeons would recognize the relationship of the gland to the sphincter and realize that a chronic prostatitis may effect such changes within the sphincter as to prevent the bladder from emptying itself, they would not erroneously operate on such cases as prostatic tumor.

#### RESUME

1. Urinary retention is often due to fibrosis of the muscles forming the bladder neck. This is caused by an extension of a persistent prostatic infection.



2. It is unsurgical to attempt to remove such prostates.

3. The capsule of the prostate does not entirely surround the gland, but is absent at the apex and the base.

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### TRAUMATIC RUPTURE OF THE NORMAL SPLEEN\*

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Rupture of the spleen, spontaneous or traumatic, is imperfectly understood and though many hundreds of cases have been reported in the literature, the subject demands much additional study. Spontaneous rupture of the spleen has occurred in typhoid fever, in amyloid degeneration, in malaria and in many other pathologic conditions associated with splenomegaly. The pathological spleen, owing to its enlarged volume, increased friability and lessened mobility consequent to the presence of perisplenic adhesions, is predisposed to traumatic rupture. Traumatic rupture of the pathologically enlarged spleen may follow a slight accident as in the case

reported by Dorolle<sup>1</sup> in which a soldier with an enlarged malarial spleen died a few minutes after having been struck a light blow on the side. At autopsy, the spleen presented two tears, one, on its external, the other, on its internal surface. It weighed 995 grammes; the abdominal cavity contained over 3 litres of blood.

Usually, rupture of the normal spleen results from a severe abdominal contusion or crushing injury. The vast development of automobile traffic on our streets has increased the frequency of this lesion. Therefore, a paper on the subject is not untimely and may serve to emphasize the importance of splenic rupture and the possibility of its being overlooked in patients, victims of automobile accidents. This paper deals only with traumatic subcutaneous rupture of the normal spleen. Such a rupture is usually due to a direct crushing injury on the left hypochondrium or over the left thorax as one may sustain in a fall from a bed, tree, etc., from a blow, a kick (man<sup>11</sup>, or horse<sup>17</sup>), or from the impact of a hard body, a fractured rib, etc. Rupture, due to penetrating wounds from without, we will not consider at this time. The small volume, mobility and location of the normal spleen all protect it to a certain extent from injury.

Berger,<sup>2</sup> in 1907, collected from the literature 467 cases of splenic traumatism, 306 of which were subcutaneous injuries. Two years later, Borgsitter<sup>3</sup> increased the number to 203 surgically treated cases. Barnes, in 1914, reported 31 further cases of rupture of the normal spleen and Willis,<sup>5</sup> in 1919, found 53 more cases reported.

*Etiology.*—This injury occurs in both sexes; in children<sup>10</sup> and in adults. Age or sex, of course, have no significance in traumatic cases. The automobile has many advantages and has become almost a necessity to a large section of the population, but it is also a powerful agent of injury and death. Many cases of traumatic rupture of the normal spleen reported in the medical literature of recent years have been the result of automobile accidents. Alamartine,<sup>6</sup> Koltès,<sup>7</sup> Willis<sup>5</sup> 2 cases, Garlock,<sup>9</sup> Frank<sup>10</sup> and Chaliér<sup>12</sup> have reported cases of the kind. In McCracken's<sup>13</sup> 20 cases, one-third were due to train or motor-car accidents. To produce a splenic rupture, it is not necessary that the car should pass over the victim; in a collision, such

\*Report of three cases with a cursory review of the literature.

an injury may also result to an occupant of the car. In Kolte's case, the patient had been thrown out of the car and was operated on for a splenic subcapsular hemorrhage, 4 days later. In 2 of the 5 cases reported by Butler and Carlson,<sup>8</sup> the patients had been struck by an automobile; in the other three cases, the wheels passed over them. In most of the reported cases, the patient has been struck by a machine. A fall on the left lower ribs on a sharp surface is liable to cause a splenic rupture.

Splenic rupture may result from an abdominal traumatism elsewhere than in the splenic region. Latouche's<sup>14</sup> patient was a child 10 years of age who, following a fall on the right side, presented a splenic rupture. Forced extension and exaggerated flexion of the body have caused splenic rupture; at times, the fragment of a broken rib is the causative agent.

In automobile accidents, usually, the rupture is produced by a direct blow on the flank over the spleen or else by the spleen being compressed between two hard opposing surfaces either directly or through the medium of the ribs.

Within the past year I have removed two ruptured spleens. In reporting them, I wish to report also a case in which ten years ago I removed a ruptured spleen. All these patients were victims of automobile accidents. Short histories of these cases follow:

#### CASE HISTORIES

Case 1. R. R., male; 8 years old, referred by Dr. L. Roth. History: The boy having been struck by an automobile was conveyed immediately to his home and there seen successively by several physicians who failed to make a definite diagnosis. Dr. Roth was consulted 48 hours after the accident. The child then complained of severe abdominal pain and tenderness, both especially marked in the left hypochondriac region; he was pale, nauseated and apparently suffering from deep traumatic shock. Over the left hypochondriac region, the abdomen was tense, contracted and rigid. Temp. 99, extremities cold and clammy, pulse 100 and weak. A blood examination showed: R. B. C. 2,950,000; W. B. C. 14,350, hemoglobin 45 per cent. The symptoms suggested an internal hemorrhage and an immediate laparotomy was decided upon. Operation: Ether anesthesia. Rupture of the spleen being suspected, a long, left transverse, subcostal incision was made. On opening the peritoneum, a large quantity of fluid and clotted blood escaped; it was found to proceed from the lower pole of the ruptured spleen on the convex surface of which could be seen a large stellate fissure partly filled with large clots. After walling off the

intestines the spleen was exteriorized, its pedicle was clamped and ligated serially with double ligatures of chromic gut and the organ removed. Peritoneal toilet and closure of the abdomen; no drainage. An infusion of 500 c. c. of saline solution was given. The boy made an uneventful recovery.

Case 2. Miss J. H., aged 20 years, was knocked down by an automobile. While still unconscious, she was taken to the St. Paul Hospital, Chicago, where for about 48 hours she remained in a condition of intense traumatic shock; she had a very rapid and weak pulse, a facies of cadaveric pallor and marked dynopea. T. 95; p. 105; Resp. 24. Under continuous application of the usual restorative measures, the patient began to improve.

Examination: The patient's body showed several contused areas. The expectorate was slightly blood-tinged. Tenderness and muscular contracture, fairly marked over the whole abdomen, were particularly noticeable in the upper left hypochondrium; there was a moderate degree of tympanites. The left hypochondrium was dull on percussion. Fracture of the left tenth and eleventh ribs could be demonstrated. The patient complained of pain in the left shoulder. Blood examination showed R. B. C. 3,050,000; W. B. C. 12,700. Fifty-eight hours after the accident, owing to the continued presence of all the signs and symptoms of an acute anemia indicative of an internal hemorrhage, it was determined to explore the abdominal cavity.

Operation: A splenic rupture being suspected, the abdomen was opened by a left subcostal incision. The peritoneal cavity contained a large amount of free and clotted blood which was quickly removed. Exploration traced the hemorrhage to the spleen which was found ruptured in the superior pole. After ligation of the pedicle with chromic gut, the organ was removed; two gutta-percha drains extending to the former splenic bed were inserted. They were removed two days later. Abdominal closure. The left side of the chest was immobilized by overlapping strips of adhesive plaster extending over the left half of the thorax from the anterior median line of the body to the posterior median line. Following the operation, a subcutaneous infusion of 700 c. c. of saline solution was given. It was repeated daily for three successive days. The patient made a smooth recovery. One month after the accident, the only symptom present was some pain over the left chest on coughing, sneezing or yawning.

Case 3. Referred by Dr. Ross, H. A., 18 years old, sustained abdominal injuries in an automobile collision. He was immediately conveyed to the Iroquois Hospital, Watseka, Illinois. When seen two days after the accident, he was suffering from intense abdominal pain and presented a board-like rigidity of the abdominal wall and other signs of abdominal injuries. Pain on pressure was especially marked in the left hypochondriac region; patient was very pale, pulse and respirations were accelerated; patient had vomited. Splenectomy, recovery. Ten years later, he is



in excellent health and is able to work the same as his comrades.

*Symptoms of Splenic Rupture.* The most important immediate symptoms of splenic rupture are, as may be expected, those that arise from severe abdominal visceral injuries, viz., traumatic shock, hemorrhage and abdominal phenomena. Vomiting is not a constant symptom. These immediate symptoms do not as a rule enable us to differentiate a splenic rupture from that of any other abdominal viscus. Generally, it is only after a delay of several hours, or even days in some cases, that the intensification of existing symptoms or the appearance of new ones focuses attention on the spleen.

In every case of abdominal contusion, splenic rupture is a possibility. Therefore, in examining patients with traumatic abdominal injuries, the possible clinical symptoms associated with splenic rupture should always be kept in mind. This is very important in automobile accidents, as in these victims the contusions and injuries are often general and are not necessarily confined to the hypochondriac region. It is well to remember that such injuries may happen within a car as well as to those injured by a car striking or passing over them; severe blows on the flanks or a costal injury in the neighborhood of the spleen are very likely factors in the production of a splenic rupture.

Let us consider the most salient symptoms caused by splenic rupture. Shock is usually, but not invariably, present. It is manifested by its usual signs and symptoms: pallor, cold sweat, drawn facies, rapid respiration, small and rapid pulse, etc. Patients may get up and walk for some time after the accident, but syncope appearing some hours or some days after an abdominal injury, associated with a small rapid pulse is suggestive of a delayed hemorrhage, and when supported by other corroboratory symptoms, is almost pathognomonic of splenic rupture. This delayed or recurring syncope is indicative of recurring hemorrhage and calls for immediate operative relief. Persistent pain and tenderness especially when stronger later than at the time of the accident are also symptoms of great value. The pain in the case of a splenic rupture may not be strictly localized. It is always most marked in the superior abdominal quadrant, it may be iliac, inguinal or irradiate

to the lumbar region. In character, the pain is acute, often stabbing, and is more intense on pressure and in the dorsal decubitus.

Pain in the left shoulder<sup>5</sup> when present is a very important though not an absolute symptom of splenic rupture. It has been reported in about 10 per cent. of the cases, although it is probable that it was present in many others but not looked for. This sign has been observed in spontaneous as well as in traumatic rupture of the spleen. It was present in one of my cases. It may be a late sign as in Havlicek's case<sup>15</sup> of hip dislocation and associated splenic and pancreatic rupture in which it was only observed on the fifteenth day after the accident, at a time when there were no abdominal symptoms. The corresponding upper limb is also usually cold. Quenu<sup>16</sup> attributes this scapulo-humeral pain to possible irritation of the inferior surface of the diaphragm by blood clots and also to irritation of the centripetal fibers of the splenic nerve, the medullary centers of which are adjacent to those of the sensory nerves of the shoulder. On the other hand, Havlicek thinks the pain is referable to the splanchnics rather than to the phrenic nerve. Muscular contraction or rigidity of the abdominal wall is usually a very early and progressive symptom; at first, it is localized; later, it becomes generalized (board-like abdomen). It may be delayed, Hubbard<sup>17</sup> and Latouche<sup>14</sup> or absent even in complete rupture. It was observed in about half of the reported cases and it is more likely to be found on the left than the right side. It was present in all my cases.

Tumefaction over the region of the spleen, either stationary or progressive in character, has been reported in a few cases and is indicative of a strictly localized effusion of blood or hematoma. The pulse may not be accelerated. There have been cases in which patients with an abdomen full of blood have shown an approximately normal pulse; nevertheless a very rapid thready pulse, when present with other signs, is highly suggestive of internal hemorrhage. Temperature usually falls immediately after the accident but may return to normal or higher within a few hours.

*Dullness* is usual over the lower abdomen. The most important sign connected with dullness is that known as Pitts and Ballance's sign, first

described by them in 1896. It apparently has received but little attention as it is recorded as having been sought only in a very few of the reported cases. Pitts and Ballance<sup>18</sup> found that if there be present an effusion of blood in the abdomen from a ruptured spleen, when the patient was turned on the right side the flank remained dull owing to the presence of fixed clotted blood, but on turning the patient on the left side the right flank becomes sonorous. This sign, right-flank sonority and persistent left-sided dullness on change of position is strongly presumptive, in fact, is practically pathognomonic of splenic rupture. Its absence, however does not negate the presence of splenic rupture.

*Hemorrhage:* In injuries and ruptures of the abdominal viscera, symptoms of internal hemorrhage furnish an almost imperative indication for immediate operation. In the cases collected by Berger<sup>2</sup>, hemorrhage was the immediate cause of death within the first hour in 52 per cent. of the cases of splenic rupture; in 14 per cent. between 1 and 16 hours, and between 1 and 24 hours in 34 per cent.

In immediately fatal hemorrhage, Quenu<sup>10</sup> states that the patient presents great pallor, cold extremities and cold and clammy skin. The patient complains of vertigo, tinnitus aurium. The pulse is small and rapid, the temperature low and the respirations superficial. The abdomen is painful and on palpation presents areas of dullness.

The common type of hemorrhage following splenic rupture is, however, not so striking. The extent and nature of the rupture determines the amount of hemorrhage. The extravasated blood may become partly encysted or slowly escapes into the peritoneal cavity owing to clotting at the vascular orifice, vasoconstriction, muscle contraction, etc. The hemorrhage may become arrested by clotting as the blood pressure drops, to recur again as the patient's condition improves. The hemorrhage may be interstitial forming simple ecchymoses or small subcapsular or intrasplenic hematomas. When the capsula itself is ruptured, the blood may either be encysted through the formation of peri-splenic adhesions or in the absence of adhesions, effuse freely into the peritoneum.

Finally, there may be what is called delayed or secondary hemorrhage. In such cases, the

patient makes a rapid apparent recovery and there are no immediate symptoms of internal hemorrhage. However, after a period varying from hours to days, the patient, especially after some exertion, some increase of intra-abdominal pressure, such as attends coughing, defecation, suddenly collapses with all the symptoms of intense internal hemorrhage. Rupture into the peritoneal cavity of a subcapsular hematoma<sup>20</sup> or the giving way of protecting perisplenic clots or adhesions may determine all the symptoms of acute anemia.

Pitts and Ballance<sup>18</sup> in 1896 reported 17 cases of delayed hemorrhage after splenic ruptures. In the more recent literature, Schlegel<sup>19</sup> reports a case of splenic rupture in which 12 days intervened between the accident and the time of operation. In Cisler's<sup>20</sup> case, the interval was the same and the patient had left the hospital and had resumed his occupation. There were 1½ litres of blood in the abdomen following rupture into the peritoneal cavity of a splenic subcapsular hematoma. In Patel and Vergnory's<sup>21</sup> case, the free interval was 13 days and in Eisenklam's<sup>22</sup> case due to a fall out of bed the interval was 19 days, which is the longest I find recorded. In Eisenklam's case, the spleen presented a nine-centimeter gaping tear in its parenchyma. In this case, 19 days after the traumatism, the stretched splenic capsule burst and there resulted pain and shock, an outflow of blood into the peritoneal cavity. Previous to the involvement of the peritoneum, the patient had experienced little or no discomfort.

*Blood:* In a few cases, diagnosis was based on the blood examination revealing a large fall in red blood corpuscles. Butler and Carlson<sup>8</sup> in 1926 reported nine cases; in all the patients, except one, the leucocyte count was about 16,000. In the case reported by Koster<sup>23</sup> in which the patient was struck by an automobile the blood count showed R. B. C. 2,500,000, W. B. C. 12,200 and hemoglobin 35 percent.; and in all my cases the red blood count was low.

*Thoracic Injury:* Chalié<sup>12</sup> in a recent article has drawn attention to the costal injuries so frequently associated with spleen rupture. When the injury is of a crushing injury, some of the ribs are likely to be fractured. The spleen is deeply imbedded under the diaphragmatic cupola and is protected by the inferior border of the



thoracic cage. In order that a rupture be produced, Chaliier thinks it is necessary that there be a concomitant lesion of the thorax which may amount to a fracture of the ribs and in the case reported by him (which also was an automobile wreck case) and in some reported by other clinicians there was such an injury. Three of the nine cases reported by Butler and Carlson showed such an injury; there was a rib fracture in one of my cases. In general, the literature shows that the possibility of such an associated injury has been frequently overlooked; it probably was present but not noticed in many of the recorded cases. It is stated to have been observed in from 10 to 15 per cent. of the published cases.

*Diagnosis:* From the foregoing it can be easily inferred that an exact preoperative diagnosis of splenic rupture is not always easy, is not always possible even though signs and symptoms may be very suggestive, very presumptive. Diagnosis ought to be based on the patient's previous state of health, the circumstances attending the injury and particularly on the mode and time of appearance, grouping and evolution of the symptoms. Although splenic rupture may follow any abdominal traumatism, it is more likely to occur if violence be applied either laterally on the external face of the base of the thorax or from the front backward on the anterior abdominal wall in the left superior quadrant.

Failure or delay in diagnosis aggravates the prognosis. In Berger's collection of cases, a preoperative diagnosis was made in only 15 per cent. In 19 previously unpublished cases, observed either by Quenu and his colleagues, a clear diagnosis was made in eight and a probable diagnosis in three. In the 151 operated cases of traumatic splenic rupture which Quenu collected from the literature, an exact preoperative diagnosis was made in 43, and in 15 others a diagnosis of internal hemorrhage was made without precise location of the injured viscus. As a general rule, the exact diagnosis followed an exploratory laparotomy indicated by the symptoms of acute abdominal hemorrhage. In my own cases, the operative indication was internal abdominal hemorrhage, injury of the spleen being strongly suspected.

Quenu thinks that a diagnosis of traumatic splenic rupture can be made in the latent period, when a patient who has recently received an

injury involving the left hypochondrium, shows a certain sensitiveness in this region as well as a certain degree of persisting abdominal wall contraction, especially if the temperature keeps about 38°C.

*Differential Diagnosis:* Rupture of the liver may simulate splenic rupture especially in a child having a well-developed left lobe of the liver. Splenic rupture may simulate rupture of the left kidney, but the latter condition is associated with hematuria. Ruptured gastric ulcer is accompanied by more intense peritonitic phenomena and by frequent hematemesis. In a case reported by Wallace,<sup>24</sup> the diagnosis was cholecystitis but in this case the splenic rupture had occurred two years before, following a blow from a car and the ribs had been fractured but the patient had recovered spontaneously. Moreover, the case was complicated as being one of transposition of viscera. In women of the child-bearing age, a ruptured ectopic fetal sac would have to be excluded.

*Evolution:* When the rupture is not very extensive and only a small hematoma intra-splenic or peri-splenic results, the effused blood may in time become absorbed or encysted; it may initiate a fibrous tumor by organization of the clot; or it may undergo purulent transformation. In Wallace's case above referred to, the ruptured spleen was found in a mass of adhesions; it was fibrous and atrophied.

When not very extensive, a rupture may heal spontaneously. Descout.<sup>25</sup> Hueggler<sup>26</sup> at the autopsy of a patient who had died from a hepatic neoplasm 15 days after a splenic rupture, found the splenic tear closed by a resistant thrombus.

If a splenic rupture be left to its own evolution, the mortality varies from 38 to 90 per cent. according to different statistics. Of 168 cases collected by Berger in 1907, 145 died the first day, the fatal result being due to hemorrhage in 90 percent. The prognosis is much better in children; Fevrier<sup>27</sup> reported 15 cases occurring in patients under 20 years of age; 12 of these recovered. Quenu found that the mortality of splenic rupture treated by splenectomy in patients under 20 years old was only 14 per cent. as compared with 32 per cent. in patients above that age. Schlegel found that 15 cases of splenic rupture treated by splenectomy within 1½ to 12 days after the oc-

currence of the accident gave 12 recoveries.<sup>19</sup> The condition of delayed hemorrhage has already been alluded to.

*Complications:* Traumatic rupture of the spleen may be the only lesion present; it may be one of two or more near or distal associated lesions. Contusions, lacerations and ruptures of the left kidney, pancreas and liver are the most frequent complicated lesions. Chavannex and Guyot state that rupture of the left kidney has been found in 25 per cent. of the reported cases of splenic rupture. Havlicek<sup>15</sup> and Zeano<sup>29</sup> each report a case of simultaneously ruptured spleen and pancreas. In these two patients, removal of the spleen was followed by recovery. Co-existing gastric, diaphragmatic or other injuries may aggravate the patient's condition.

*Pathology:* In traumatic splenic rupture, the lesion may vary from a simple contusion characterized by sub-capsular ecchymoses and integrity of the capsule to multiple tears, T, Y-shaped or stellate fragmentation or even complete avulsion of the viscus from its vascular pedicle. There may be a crushing or a bursting of the organ. Pohl<sup>30</sup> in 1910 reported a case successfully operated on in which a child 3½ years old was crushed beneath the wheels of a carriage; the splenic vein alone was torn, the artery being uninjured.

In some cases, there is only an intrasplenic effusion of blood or a hematoma of greater or lesser volume which, as already stated, may form the starting point of a serious or fatal secondary hemorrhage. In splenic rupture proper, the capsule is usually torn and there may be detachment of a portion of the substance of the spleen into the abdominal cavity.

Opinions vary as to whether the internal or external face of the spleen is most usually injured; the lower part of the spleen being least protected is more frequently the site of injury.

*Treatment:* From the high mortality which attends the expectant treatment of splenic rupture, it is evident that the only effective treatment is operative. When a fairly probable diagnosis has been established delay is dangerous. A properly performed needless laparotomy is practically without dangers; a non-operatively treated splenic rupture is almost invariably fatal. Delay only serves to diminish chances which operative aid may have to offer. The surgical measures

may be divided into conservative and radical procedures. The exposure of the spleen may be done under either paravertebral or general anesthesia.

The conservative measures applicable are cauterization, ligature of the splenic pedicle, tamponade and splenorraphy. Ligature of the vascular pedicle en masse, is liable to cause necrosis of the organ. It is to be rejected. If the splenic artery alone is ligated, atrophy of the parenchyma results. It may perhaps be employed when there are extensive vascular adhesions. Conditions very rarely warrant its performance.

Tamponade, though it may be quite effective in arresting hemorrhage, has two important drawbacks. At best, it is a very uncertain measure and it eventually leaves a weak spot in the abdominal wall. Tamponade either alone or combined with simple suturing, may be resorted to in cases of limited rupture or when the condition of the patient does not warrant a long operation. Berger's statistics include 10 cases of splenic rupture treated by tamponing with one death, and Quenu gives 15 cases with two deaths.

Splenorraphy was first done by Lamarkia in 1896 and has been employed by many surgeons since then. Owing to the inaccessibility and friability of the spleen, it is generally a difficult operation; its general mortality has been reported as 50 percent., but Willits, in 1919, found it to be 25 per cent. If splenorraphy is done, the suture line should be covered with omentum as Gourrin<sup>31</sup> suggests, both for hemostasis and peritonization. It is only rarely practicable.

In general, splenectomy is the operation of choice in any important splenic rupture, particularly a transversal rupture or in extensive lacerations. It insures complete and permanent hemostasis. In the absence of perisplenic adhesions, it is of easy and rapid execution. Partial splenectomy is indicated when the lower pole of the spleen is completely detached and the remaining part integral.

A median incision may be employed for an exploratory laparotomy but the splenectomy (subcostal) incision should be used when a fairly precise diagnosis is made. It must be said, however, that the diagnosis is usually a probable diagnosis. To the median incision may be added



a transverse incision extending towards the loin.<sup>3</sup> An adequate incision is most serviceable in cases of associated visceral lesions. One must be careful not to injure the tail of the pancreas.

Splenectomy appears to have been first done by Roddick, in 1885, who removed the organ through a small opening in the lumbar region. In Berger's statistics, 135 splenectomies gave a mortality of 38.7 per cent. Borgsitter in 1909, who collected 203 cases of splenectomy (not all traumatic cases), found the operative mortality of splenectomy to be 35.3 per cent. Willis in 1919 found that the mortality of splenectomy for traumatic rupture cases was 28.8 per cent. Schlegel states that in fifteen cases in which an interval varying from 1½ to 12 days elapsed between the occurrence of the injury and the operative relief, splenectomy gave 12 recoveries.

In the Mayo clinic<sup>32</sup> the mortality in 417 cases of splenectomy for all conditions, done from 1904 to 1926, is stated to have been 10.3 per cent. Only 10 of these were traumatic cases. According to Quenu, the general mortality of splenectomy for adults above 20 years old is 32 per cent. and for individuals under 20 years 14 per cent. The operation can be successfully combined with nephrectomy as in Hersey's<sup>33</sup> case.

Is splenectomy, in the human subject, attended with lasting undesirable after-effects? This can be more intelligently answered after a brief enumeration of the functions<sup>34</sup> of this organ. Removal of the organ means a temporary, a partial or complete abolition<sup>35</sup> of those functions partly or wholly dependent on the spleen. What are these functions?

(a) During prenatal life, the spleen participates in the formation of leucocytes and of red blood-cells. After birth, it takes part in the destruction of deteriorated or disintegrated red blood-cells. It has been called the "graveyard" of the red blood corpuscles. The liberated hemoglobin of the destroyed blood corpuscles is conveyed by the splenic vein to the liver and there transformed into bilirubin. According to some investigators, the liberated hemoglobin may be manufactured into bilirubin in the spleen itself.

(b) It forms white blood corpuscles, particularly lymphocytes. A large number of lymphocytes are produced by the Malpighian bodies. "All the white blood-cells have defensive func-

tions, especially the large mononuclear endothelial leucocytes." Mayo.

(c) It assimilates iron and is a storehouse for it, especially the iron liberated from the decomposition of red blood-cells. The liver, on the contrary, is the storehouse of the iron ingested; it may partake of the spleen function. The spleen is regarded by some as the principal organ of the reticulo-endothelial system, playing a dominant role in iron metabolism.

(d) It acts as a scavenger, as a filter, separating worn-out cells, infectious and toxic agents from the blood stream. These under normal conditions, are either destroyed by the phagocytic activities of the spleen or conveyed into the liver for destruction or detoxication. As the lymphatic glands act upon the lymphatic stream, so the spleen acts upon the blood brought to it.

(e) It has some share in nitrogenous metabolism and it plays an important part in the digestion, consumption and utilization of food (Richet). During digestion, the spleen expands and contracts synchronously with the digestive periods. "That the spleen must be of some significance in digestion has been prompted by the gland's intimate anatomic connections with the portal system; its blood supply from the celiac axis, its proportionately excessive atrophy during starvation and inanition, and by references by many experimental investigators, as well as by many clinicians, to a state of hunger and voracious appetite after splenectomy." (Kahn.)<sup>38</sup>

(f) It acts as a kind of vascular reservoir to the portal system and to the vessels of the stomach.

(g) Under normal conditions it produces blood platelets.

(h) It elaborates ferments, and also a hormone which has a stimulating action on bone-marrow. By its pump-cells, it influences blood pigments and metabolism. The bone-marrow is called the "cradle" of the red-blood corpuscles.

(i) It is considered by some investigators as a member of the sympathetic endocrine system. It has no external secretion and it has not been demonstrated that it has an internal secretion.

Following the removal of the normal spleen as in traumatic rupture, in splenic neoplasms, etc., certain changes usually occur. In cases in which these changes fail to develop, the exist-

ence of one or more accessory spleens may be suspected. After splenectomy, there is noted:

(a) A secondary anemia due in part to the operative hemorrhage incident to splenectomy, and in part to the loss of the spleen.

(b) An increased resistance of the red blood-cells to various hemolytic agents (hypotonic salt solution, hemolytic serum, etc.).

(c) A lessened tendency to hemoglobinuria, to jaundice and sometimes even an absence of jaundice after the exhibition of hemolytic agents.

(d) An increase in the total fat and cholesterol content of the blood which gradually decreases and returns to normal (Eppinger). This has been observed both in splenectomized dogs and in the human.

(e) A transient decrease in the antiseptic and bactericidal properties of the blood serum which rapidly returns to the normal. The agglutinins and opsonins remain unaltered (Bucalossi). The bodily vigor and resistance are decreased.

(f) Changes in the blood-picture which usually persist for several months<sup>35, 38</sup>. The blood-picture usually returns gradually to normal. In some cases, the postoperative anemia is permanent.<sup>35</sup>

1. Appearance of polycythemia, 5,500,000-7,000,000 per cu.m.

2. Numerical increase in lymphocytes and in eosinophiles.

3. Presence of nucleated red blood-cells.

4. Morphological changes in the red blood-cells.

(g) A disturbance in the iron metabolism.<sup>36</sup> An increased output of iron in the feces which lasts for from four to six weeks.

(h) An hypertrophy of remaining splenic fragments, of accessory spleen or spleens, even to the size of the normal spleen, a hyperplasia of the lymphatic glands of the greater curvature of the stomach and of the omentum, a hyperplasia of lymphoid tissue throughout the body, and an increase in the size of the liver. This hypertrophy compensates in time for the loss of the spleen.

(i) A weakening of the digestive power for a period of several months. There is a temporary diminution in gastric secretion.

(j) Owing to the release of the controlling influence of the splenic hormone, the bone-

marrow functions to excess. It also changes from its normal yellow fatty character to a red cellular hyperplastic type.

(k) A decrease of fat in the feces.

The spleen is an important organ. Nevertheless, animal experiment and clinical observation amply show that splenectomy does not noticeably impair growth, reproductive power, general health, nor apparently shorten life expectancy. That this ductless gland, the largest in the body, is not as essential an organ as the liver, the thyroid gland, the pancreas or the adrenals, is evidenced by its rare absence at birth and by the survival of patients after its removal. After splenectomy, the functions of the organ are vicariously assumed by other elements of the reticulo-endothelial system. These elements are found in the sinuses of the lymph glands, in the capillaries of the liver lobules (stellate-cells of Kupffer) and of the bone-marrow, in the connective tissue (wandering cells), in the adrenal cortex, in the hypophysis, etc. The cells of the reticuloendothelial system devour deteriorated blood-platelets, effete red and white blood corpuscles and metabolize all of these.

Accessory spleens occur; they vary in size, location and number (from one to twenty). In a patient operated<sup>34</sup> on for strangulated intestine, fifteen years after a previous splenectomy for splenic rupture, the following findings were noted: "The whole of the peritoneum covering the small intestine and mesentery was covered with small tumors, varying in size from that of a pin's head to about one inch by half an inch. These tumors were either sessile or pedunculated, and appeared to have involved only the peritoneal covering of the gut. There were perhaps 200 to 300 tumors. The general appearance suggested splenic tissue; they appeared to be quite innocent in character. The microscopical examination by the Pathology Department, University of Sheffield, of one specimen removed for examination, showed that it was a small mass of splenic tissue, containing pulp with sinuses and Malpighian bodies. The whole structure presented a dense fibrous tissue capsule, and an increased amount of fibrous tissue in the trabeculae. In this case, evidently, at the time of splenic rupture living splenic cells were set free and implanted in the peritoneal cavity. The



amount of splenic tissue so formed appeared to be quite equal to that in a normal spleen."

According to Koster, there appears to be some general compensatory lymph gland enlargement following splenectomy; Jolly and Lieure<sup>39</sup> have reported that in animals there is a possibility of a real regeneration of the spleen; and O'Connor<sup>40</sup> mentions the possibility of accessory spleens functioning after splenectomy.

### CONCLUSIONS

1. Traumatic rupture of the normal spleen is becoming more common with the increase of automobile accidents. Three personal cases of this kind are reported.

2. The symptoms of splenic rupture are in general not pathognomonic except perhaps Pitts and Ballance's sign of left-sided dullness and right-sided sonority on percussion.

3. The patient's safety lies in early and precise diagnosis, followed by immediate laparotomy and appropriate operative relief.

4. The prognosis in cases of splenic rupture left to their own evolution is extremely bad. In the presence of splenic injury and severe internal hemorrhage, immediate or delayed, the most conservative form of treatment is early splenectomy. It secures complete and permanent hemostasis. It is a life-saving operation.

5. Removal of the ruptured normal spleen is usually an operation easy and rapid of execution. The removal of the pathological spleen embedded in or bound down by dense perisplenic adhesions may present great though not insuperable difficulties. Drainage is rarely indicated.

6. The operation of choice for important splenic rupture is splenectomy, performed under paravertebral or general anesthesia. It is the present belief that splenectomy does not materially shorten the life of the individual. Earlier operation, improved technique and judicious postoperative treatment have lowered and improved the results of splenectomy.

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### PRESENT TREATMENT OF ERB-DUCHENNE BRACHIAL BIRTH PALSY\*

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An obstetrician first described the brachial birth paralysis. Much has been added since to the knowledge of the condition, particularly regarding the cause and etiology in the field of obstetrics. To the neurologists we owe a great deal for their contributions about the symptoms. An explanation of the findings on the basis of

the pathological lesion has been their chief concern. The problem of treatment has in the main fallen to the lot of the orthopedists. Many therapeutic measures have been advanced. It is the first concern of this paper to show those methods which have proven the most satisfactory. The conclusions are based on a study of thirty carefully chosen cases observed at the Mayo Clinic and the Caroline Institute.

The literature on the subject though profuse contains a confusion of terms. Erb,<sup>1</sup> in his original article describes it as a paralysis of that part of the brachial plexus which contracts upon superficial stimulation at Erb's point. Erb's point lies two centimeters above the clavicle and lateral to the posterior border of the sternocleidomastoid muscle at the level of the transverse process of the sixth cervical vertebra. Electrical stimulation at Erb's point produces contraction of the deltoid, the supra- and infra-spinatus, the biceps, the brachialis anticus, brachioradialis, and supinator longus and brevis muscles. These muscles correspond to the ones paralyzed in the case described by Duchenne.<sup>2</sup>

Frequently the extensor carpi and the extensor digitorum communis are included. On the other hand the infra- and supra-spinatus as well as the supinators may occasionally remain uninvolved.

A flaccid paralysis of the muscles named above results in a very characteristic deformity of the upper extremity. The arm hangs at the side and is adducted and rotated inwardly at the shoulder. The forearm is pronated and slightly flexed at the elbow. With the palm drawn up this produces the so-called policeman's or porter's tip position. In addition to the diagnostic position there is atrophy of the musculature without sensory disturbance. The affected limb is smaller than its mate. When such a condition occurs at birth it can be defined as an Erb-Duchenne brachial birth palsy.

*History:* Brachial birth palsies undoubtedly were observed long before the first recorded description by Smallic<sup>3</sup> in 1768, in which case both arms were involved. Then for nearly a century the subject was neglected. Not until 1851 did Danyan<sup>4</sup> report a case of upper paralysis where a post-mortem examination performed eight days after birth revealed bruising and hemorrhage around the brachial plexus. Soon after Gueniot<sup>5</sup> reported a similar case. Duchenne, in 1872, in

a study of electrical reactions, recognized the existence of an actual paralysis. Two years later Erb was able to localize the lesion in these cases by electrical stimulation of the plexus at about the junction of the anterior trunks of the fifth and sixth cervical nerves. Seeligmüller,<sup>6</sup> in 1879, expressed the opinion that the lesion was due at times to stretching as well as compression of the nerve. Until 1879 the characteristic position of the arm after a birth injury was considered as proof of a plexus lesion at Erb's point. Küstner<sup>7</sup> at this time advanced the theory that the symptoms described in brachial birth palsy were due to displacement of the upper epiphysis of the humerus.

Kennedy,<sup>8</sup> in 1903, presented the first description of an operation upon a brachial plexus lesion in an infant. Two years later this description was confirmed by the pathological findings as set forth in an excellent article on brachial birth palsies by Clark, Taylor and Prout.<sup>9</sup> Whitman,<sup>10</sup> in the same year, emphasized the importance of the disability due to dislocation of the shoulder in these cases. Fünck,<sup>11</sup> in 1909, declared the typical position of brachial birth palsy due to a luxation, while Turner Thomas,<sup>12</sup> a few years later, stated that the position could be explained by the assumption of a primary injury to the capsule of the shoulder joint. Peltesohn<sup>13</sup> compromised these views, believing that there has been included under the diagnosis of brachial birth palsy distinct varieties of pathological lesions producing the same type of deformity. About this time Taylor<sup>14</sup> emphasized the presence of a nerve lesion and advised early operation on the plexus. Hoffa<sup>15</sup> and Spitze<sup>16</sup> had long since performed osteotomies of the humerus to correct the inward rotation. Fairbanks,<sup>17</sup> in 1913, and later Sever,<sup>18</sup> called attention to the corrective measures against the deformity and brought forth the division of the subscapularis muscle as a successful operative measure. In 1917 Platt<sup>19</sup> discussed the different views regarding the pathogenesis of the condition. Subsequently, Bentzon,<sup>20</sup> whose thesis on obstetrical paralysis of the brachial plexus appeared in 1922, believed the causative factor to be a tearing of the nerves of the brachial plexus. Valentine,<sup>21</sup> who later described an avulsion of the nerve, agreed with this opinion.

*Etiology:* Two theories of etiology have been



mentioned—injury to the shoulder joint and a lesion of the brachial plexus. Shoulder joint injuries do occur at birth and in the early stages give rise to the same symptoms as a brachial palsy. The course of recovery eventually distinguishes them. They have thus become known as pseudo-birth palsies. Pseudo-birth palsies may be the result of a congenital dislocation of the shoulder, of an epiphyseal separation or an epiphysitis, or of an injury to the joint capsule which causes a contracture. According to the views of Schubert, heredity is an important factor in the occurrence of an Erb's palsy. He stresses the frequent occurrence of other congenital diseases as torticollis, congenital elevation of the shoulder and the absence of pectoral muscles together with Erb's palsy. To find a satisfactory explanation for these lesions as well as the brachial plexus paralysis, he resorts to the hypothesis that they are dysplasias and that the paralysis of the arm is due to a congenital defect of the nervous system. The operative and post-mortem findings prove that an injury does occur in the plexus and gives rise to a true birth palsy. At first it was believed that this injury was caused by pressure over Erb's point when the finger is hooked around the arm pit during delivery. The same sort of injury was supposed to be caused by the blade of the forceps. Bullard<sup>22</sup> objected to this opinion, stating that it was anatomically impossible to produce such a pressure paralysis in a normal baby. It has since been shown that the nerves may be pressed and impinged between the first rib and clavical in such a way as to cause a paralysis. Experiments on animals and cadavers have shown that traction can produce the lesion underlying an Erb's brachial paralysis. The traction can be produced by pulling the arm;<sup>23</sup> by hyperabduction at the shoulders and by forceful elevation of the arm at the shoulder. It has been shown further that the paralysis may be caused by over-extension or separation of the child's head from its shoulder. This seems to be the usual method of occurrence. Predisposing factors would therefore include everything that makes for manipulative interference, the application of forceps, or, in short, a difficult labor.

*Morbid Anatomy:* Experiments on the reaction to the faradic current led Erb to study the brachial palsies and in this way to localize the

lesion in the upper part of the plexus at about the juncture of the anterior root of the fifth and sixth cervical nerves to form the upper cord. Before localizing the lesion further let us consider briefly the nerve supply of the paralyzed muscles. The deltoid is supplied by the circumflex nerve which comes from the posterior cord of the fourth and fifth cervical nerves; the supraspinatus and infraspinatus muscles are supplied by the supra-scapular nerve (fourth and fifth cervical); the brachialis anticus has a double nerve supply, musculospiral and musculocutaneous (fifth, sixth and seventh). The chief supply of the paralyzed muscles is therefore from the fifth and sixth cervical nerves. The subscapularis muscle, through the short scapular nerve, and the pectoralis major, through the anterior thoracic, also receive their supply from the fifth and sixth cervicals. Neither of these muscles are paralyzed, however. This means that the lesion must be posterior to the origin of the short scapular and the long thoracic nerves. The sympathetic nerves are occasionally injured in Erb's palsy. This would pre-suppose an injury of the eighth cervical and first thoracic nerves; since neither of these are involved, however, an explanation is sought in the fact that the sympathetic nerve, being more fragile, is injured before the corresponding cervical and thoracic nerves.

It must be remembered that the muscles opposing the paralyzed ones are also involved inasmuch as it is these muscles which give rise to the deformity. The pectoralis major contracts and forms an adduction deformity. The unopposed subscapularis contracts to resist passive external rotation. The extensors and pronators of the forearm, due to insufficient opposing muscles, give rise to further deformity. The limited supination is partly due to the external rotation of the shoulder. The slight flexion at the elbow results from contraction of the anterior surface of the joint capsule. The joint capsule is also responsible for some of the deformities occurring at the shoulder. It may contract and cause further immobility or it may stretch and give rise to a dislocation.

Although, as we have seen above, the primary lesion involves the anterior root of the fifth and sixth cervical nerves, autopsy and operative findings show a great deal of variation in the extent as well as the severity of the pathological in-

vovement that occurs in the brachial plexus. The findings differ with each individual case and with the length of time the condition has existed. The cervical fascia is usually thickened and frequently transformed into a firm scar tissue which imbeds the nerve trunks. Strangulation of nerve fibers occurs as a result of this contracting scar tissue. Buckling of the perineural sheath may cause pressure of the nerve fibers. The nerve roots are actually torn. In a few instances the nerve roots have been found completely severed with frayed ends terminating in scar tissue. Usually there is an incomplete tear of the fibers. In less severe cases the perineural sheath and small vessels to the nerves have been torn and hemorrhage had taken place between the nerve fibers and the perineural covering. Complete avulsion of the nerve roots with changes in the cord have so far been demonstrated only in atypical cases.

*Symptoms:* Just as the morbid anatomy varies, so too, the symptoms differ. In one case the palsy may be more extensive or more complete than in another. Symptoms also differ according to the length of time the condition has been present. This difference permits a convenient division into three stages—the acute stage, the stage of recovery, and the residual deformity.

Immediately after the birth of the child the arm lies limply at the side. Frequently the supraclavicular area shows discoloration. At times a hematoma can be palpated in this area. The muscles of the shoulder and arm are tender. Passive motion seems to cause pain. Pressure over the brachial plexus will usually cause the child to cry.

The stage of recovery may begin a few days after birth or not until three months have elapsed. To the patient this is the most important period. If the recovery begins at once it usually goes on very rapidly during infancy and is followed by a slight general change covering one to two years. In those cases where the improvement begins later there is a more constant course of recovery with the maximum amount of improvement in the first six months. The power of the muscle returns spontaneously and in some instances goes on to complete recovery. Provided there is no treatment instituted the extremity assumes the typical position. As

would be expected from the description of the morbid anatomy the degree of recovery varies. Recoveries will necessarily be less complete when the nerve is torn than when it is merely stretched.

The third stage or residual deformity may occur as early as two years of age, but is usually established at adolescence. In addition to the characteristic attitude the arm may now proceed to further complicating deformities. The paralyzed muscles show atrophy which is not as complete as in poliomyelitis. Some fibers are left intact. At times the opposing muscles give rise to contractures to the extent of limiting passive motion. There are no sensory changes. Growth is impaired in the extremity involved, which is smaller than its mate. The paralyzed muscles of the shoulder allow the joint capsule to stretch. Contracture of the unopposed pectoralis major and supracapularis will draw the head forward to cause an anterior dislocation of the shoulder joint. A posterior dislocation can be explained as a result of contracture of the paralyzed muscle and the surrounding tissues of the joint. Limitation of movement may occur at the elbow due to contraction of the joint capsule and surrounding tissues.

*X-ray:* The roentgenograms at the three different stages show progressive osseous changes. During infancy there is no appreciable abnormality. The stage of recovery brings with it a delayed growth of the epiphysis in a glenoid fossa which is shallower than normal. The scapula is small and the superior angle is prominent. In the final stage the roentgenogram shows a large hooked or, occasionally, a rudimentary acromial process. The humerus shows osteoporosis. The head of the humerus is seen to be flat or oval shaped and, at times, dislocated.

*Complications:* A dislocated shoulder is but one of several complications. Paralysis of the sympathetic nerves previously mentioned as a rare complication gives rise to Horner's syndrome, that is, a ptosis of the upper eyelid, a dilated pupil, and occasionally endophthalmos plus a vasomotor disturbance of the side of the face and chest. The humerus or the clavicle may be fractured. Other deformities such as malformed bones of the forearm, torticollis, or an absent pectoralis major may co-exist.

*Diagnosis:* The diagnosis can be established by the history and the characteristic attitude



except for the pseudo-palsies. These are distinguished by the x-ray. A traumatic dislocation, a fracture or an epiphyseal separation, or a luetic epiphysitis cannot escape the roentgenogram. Poliomyelitis and diphtheritic paralysis occasionally require a little study, which a spastic paralysis is more easily differentiated. The history eliminates the traumatic brachial palsies of the adult.

There are two other types of brachial birth palsies, the Klumpke or lower arm type and the Dejerine or full arm type. A review of cases has shown that it is not a hard fast line that distinguishes these types; yet the classification is retained as a clinical convenience. The prognosis and the treatment differ in these forms from that of the Erb-Duchenne.

*The Treatment:* Prophylaxis is the duty of the obstetrician. Ehrenfest warns against the misuse of the forceps, the digging in of a finger at Erb's point during extraction of the head, and the application of traction on the head in a laterally flexed position. Every unnecessary manipulation should be avoided. Even then the palsy may occur, as illustrated by the fact that the Ex-Kaiser had a birth palsy though Jenner was the obstetrician.

The treatment in the first stages consists of rest. As soon as the condition is recognized the arm should be held in abduction and external rotation. A carefully made plaster-bed is more efficient than fastening the arm to a pillow or to the crib. Local heat to the supra-clavicular area is best applied with moist dressing.

Physiological rest for the paralyzed muscles and protection against contractures are the orthopedists' rules during the stage of recovery. The form-fitting splints of celluloid or, where this is not possible, of plaster of Paris, are superior to the usual aluminum and tin splints. Recently I have used a split cast made of starch bandages which has the advantage of being light, easily applied and form-fitting. The hand is held dorsiflexed, the forearm in supination, the elbow flexed to ninety degrees, while external rotation and abduction are maintained at the shoulder joint. With the disappearance of muscular tenderness massage is started and followed by passive motion. Stimulation with the faradic current has a beneficial effect. Active motion is encouraged early. The child plays with toys that

require the use of both hands, as a large ball or an overhead bar. The hand must be trained to attempt the usual functions in the normal way. The splint is worn whenever the hand is not in use. Daily manipulation correct the tendency to deformity. A complete plaster cast gives fixation but can be used only for a relatively short period since it interferes with growth.

To correct the deformity in the third stage manipulation under anesthesia followed by fixation has been tried with indifferent results. The operation that has universally proven most satisfactory is the division of the subscapularis. At times it may also be necessary to do a tenotomy of the pectoralis major. Where the acromion is enlarged it had best be corrected by a wedge osteotomy. The operation is followed by application of a plaster of Paris cast to maintain complete fixation. Prolonged fixation must be avoided. The plan adopted by Bentzon is to remove the upper part of cast from two to three weeks after operation. Then with the arm held in a splint when not in use physio-therapy is carried out for about six weeks to three months. To overcome the pronation of the forearm tenotomy of the pronator teres and converting it into a supinator after the manner of Tubby gives satisfactory results.

(Exploration of the plexus, though it still has staunch advocates, is gradually falling into disfavor. An avulsed root cannot be repaired. A certain amount of recovery occurs spontaneously. Though very few deaths have been reported surgery upon infants carries a high mortality. Most surgeons agree that the results do not justify the risk of an exploratory operation.)

There is no treatment for a Horner's syndrome. A fracture of the clavicle, I have found, can be held by means of a "T" cross even in infants. A humerus fracture was satisfactorily treated with splinting. In both cases it was deemed best to treat the fracture before starting the treatment for the birth palsy. The secondary dislocation of the shoulder has been combated by reefing of the capsule, by the Claremont operation, and by shortening the tendons of the supra- and infra-spinatus and teresminor. The last operations seems the most logical in view of the morbid anatomy.

*Review of Cases:* The review of thirty cases emphasizes the prominence of the role played by

trauma as an etiological factor. Fifteen (15) of the cases were delivered by forceps, five (5) were breach deliveries, four (4) were difficult labors. Only two (2) were normal deliveries. Six (6) were omitted since the type of delivery was not satisfactorily determined. Sex played no role since fourteen (14) were females and sixteen (16) males. The right arm was involved (16) times, and the left thirteen (13) times. One case had a bilateral involvement. Nineteen (19) were typical cases of the Erb-Duchenne type. Six (6) were seen only in the very early stage and the type was not established. Two (2) cases closely simulated the Dejerine type and three (3) the Klumpke type of birth palsy. All were improving or had improved spontaneously. Ten cases were seen before the age of one year had been reached and eight between the age of two and three years. Practically every age from four to twenty-five years was represented with no two cases registering at the same age. The treatment was necessarily so varied that only impressions could be gathered and these have been expressed above. The roentgenogram showed the head of the humerus flattened in two cases and a long coracoid process in two instances. The epiphysis was under-developed in one case and ten cases were reported negative. Of the complications the dislocated shoulder was the most frequent, being present seven times. In two instances it was of a recurring type. A fracture of the humerus occurred twice and in two cases anesthesia was present in the fingers. There was a single instance, each of a fracture of the clavicle, an Horner's syndrome, scoliosis, torticollis, strabismus, congenital anomaly of the hand, and bilateral club feet as a complication.

#### CONCLUSIONS

1. The clinical classification of Erb-Duchenne, Klumpke and Dejerine types of birth palsies should be retained in spite of the fact that no hard fast line distinguishes them. The treatment for each is different.

2. Primary lesions of the shoulder joint with the same symptoms as the Erb-Duchenne type are a pseudo-birth palsy. The treatment of these is manipulation and early motion.

3. The lesion of an Erb-Duchenne paralysis is in the brachial plexus. The character of the lesion contra-indicates the risk of an exploratory operation of the plexus.

4. In the first stage the use of form-fitting splints is indicated. A split cast of starch bandages has the advantage of being light, economical, and form-fitting, without interfering with growth.

5. In the third stage the Sever-Fairbank type of operation gives good results.

6. The complications should be treated separately. The logical method of treatment for secondary dislocation of the shoulder is by shortening the tendons of the supra-infraspinatus and the teres minor muscles.

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## THE ROLE OF FUNGI IN OCCUPATIONAL SKIN DISEASES\*

(WITH ESPECIAL REFERENCE TO SUPERFICIAL FUNGUS ERUPTIONS OF THE EXTREMITIES)

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#### Introduction

As superficial fungus diseases of the skin are now recognized as being very common, their role in cutaneous eruptions in industrial workers needs appraisal. Pusey<sup>1</sup> states that eczematoid eruptions of the feet and hands due to fungus infections have been seen or recognized with increasing frequency until the disorder has become established as one of the common dermatoses. These superficial mycotic eruptions, commonly called by the profession "ringworm," can at times become economic disasters of the first degree as far as incapacitating is concerned; furthermore, the deep invaders, e.g. blastomycosis, can even imperil life. Such eruptions can occur secondarily to injury or irritation received while working or the victim may have been infected by industrial contacts; they can be intensely aggravated by contact with irritants incident to working surroundings, or they can occur independently of the working conditions. Thus great importance becomes attached to their etiological capacity in order to better attack them from a therapeutic standpoint to decrease loss of valuable time of a skilled employee, thereby causing monetary loss to the employer and naturally to the insurance company.

In the past four years I have had the opportunity to study the clinical manifestations, to make laboratory examinations and to watch the therapy in 912 cases of skin eruptions considered of superficial fungus infection. In 48 of these with findings primarily on the extremities, the occupational factor had to be critically analyzed. These patients were seen in various places; a few while taking special dermatological work with Dr. J. H. Stokes, a large number in association with Dr. E. D. Osborne, others in the practice of Dr. A. W. Stillians and the others by myself in the dermatology clinic of the

Northwestern University Medical School and in my own practice. Whenever in doubt as to the cultural findings, Dr. F. D. Weidman, Director of the Laboratory of Dermatological Research of the University of Pennsylvania was kind enough to determine the proper classification.

*Literature.* In Dr. R. Prosser White's excellent brochure on "Occupational Affections of the Skin," mention is made of industrial workers' infections with the animal ringworms, favus, and such deep fungus invaders as actinomycosis. No specific mention can be found of any etiological importance attributed to the accepted superficial cutaneous invaders of the epidermophyton and certain trichophyton families in skin infections of extremities. Irritating dust containing dry fungi of the mucor family and the spores and mycelium of other moulds as aspergillus and penicillium are cited<sup>2</sup> as causing dermatitis of the uncovered parts of the body. However, in discussing the dermatitis on the hands of flax spinners and soakers, an interesting suggestion was made. These workers, when piercing and guiding the thread, constantly expose their hands to solution of chloride of sodium and to the sulphates and other salts of lime, as well as to gumming substances through which the threads pass. Leloir<sup>4</sup> is quoted as stating that lactic and butyric acid are present in this mixture. The hands are continually macerated with these and as suggested by the writer of that monograph, these workers are further subjected to the irritating action of the contained moulds and bacteria.

Lane<sup>5</sup> emphasizes the many angles to be considered in the border line occupational skin disturbances. Blaisdell<sup>6</sup> mentions the difficulty of always making an absolute distinction between the fungus infection being primary or related to the patient's employment.

That fungi which ordinarily attack animals can cause epidemic eruptions of the body which assume great occupational proportions is well illustrated by a recent report of Ravaut, Basch and Rabeau<sup>7</sup>. 194 out of 1,000 women working in government department consulted them from 1923 to 1927 for ringworm of the glabrous skin. The fungus, *Trichophyton nireum radians*, was in all probability introduced there by a cat. The epidemic was promptly stopped by sterilizing ev-

\*Clinical, Experimental and Therapeutic Studies in Mycotic Dermatitis, V.

<sup>7</sup>Read before the Chicago Medical Society, Oct. 24, 1928.

ery coat and giving each woman an individual clothes hook as the women had been in the habit of throwing their coats in piles on arriving at work.

In a recent paper on the broad general aspects of industrial dermatoses, Foerster<sup>8</sup> discussed several important angles of the fungus factor in occupational eruptions. He enumerated the infections of fungus origin causing primary occupational dermatoses, viz: trichophytosis (*tinea corporis*) observed in farmers, horse and cattle dealers, and handlers of fresh hides, sporotrichosis as seen in horticulturalists and farmers, blastomycosis and actinomycosis in farmers, mycotic paronychia and dermatitis of fruit canners and many cases of epidermophytosis. He emphasized the importance of the epidermophyton fungus in secondary infections of the occupational dermatitides and believes that such infections are compensable when the occupational disorder was a direct predisposing cause. If such a fungus dermatitis develops, or a latent infection of this type becomes activated, even through excessive perspiration or warmth at work, without an immediately preceding and existing occupational injury or inflammation, Foerster considers such a disease non-compensable because it would not have been a direct consequence of occupation. In regard to the legal aspects, the law is interpreted differently in different communities.

#### *Terminology—(Superficial Invading Fungi)*

As this study embraces in detail cases of superficial fungus invasion, no attempt will be made to discuss the deep fungi except one brief case report to show their occasional complication following an industrial injury. The terminology and classification of fungi has become very puzzling to the expert mycologist—the tendency now is to simplify the cataloguing so as to make it intelligible to clinicians.

To indicate these infections in a broad way, many terms have been used, the most common one being "ringworm" and "eczematoid ringworm" of the extremities. The usage of the term ringworm was at first limited to the ringed lesions of the body and to fungus diseases of the hair. As these infections of the extremities e. g. like these under discussion and those of close contact or intertriginous surfaces, were

found to be of fungus origin, the term has gradually been extended to include all superficial fungus infections of the skin regardless of location or morphology. As these eruptions are confined to the horny layers of the epidermis, the condition has often been called epidermophytosis which further implies it is due to the epidermophyton fungus. It is now known that only occasionally does the epidermophyton actually produce this and that it is due many times to another entirely different species called *Trichophyton interdigitale*. However, these findings are primarily of academic interest. The terms dermatophytosis and epidermomycosis have also been used. Perhaps this commonly used term, "ringworm," meaning such a superficial mycotic dermatitis is as logical as any and then if further investigation is carried out, the causative fungus name or species can be appended. As far as terminology is concerned, the main thing to remember is that these are not the usual ringworm infections of the body and scalp (*tinea corporis* and *tinea capitis*), often due to a fungus which infects animal skins; the latter do, at times, assume occupational importance. These fungi under discussion are invaders confined to man which are usually associated with intertriginous foci, e. g. toes, groins, fingers, axillae etc., a definition so aptly stated by Weidman<sup>9</sup> in a recent paper.

*Laboratory Studies.* The clinical manifestations are often characteristic enough to make a diagnosis; demonstration of the fungus makes the diagnosis absolute. While the causative fungi may be of different species, microscopically they usually appear as refractile threads after digestion with 10% aqueous solution of sodium hydroxide. Occasionally they appear in a "mosaic" form. This term is applied by Weidman<sup>10</sup> to the fungous form where the hyphae or threads follow the intercellular clefts, surrounding the small and large polyhedral spaces, which collectively give the "pavement" effect. While this mosaic arrangement may represent a fungous form in a degenerate state, they are considered pathogenic. In addition to the foregoing, yeast or budding fungi are now believed to be pathogenic<sup>11</sup> for certain people; further study must be made to ascertain their importance in superficial occupational dermatoses. Kingery



and Thienes<sup>12</sup> have found a yeast-like organism to be the causative agent in fruit canner's dermatitis, a disease affecting the fingers and finger nails.

Roofs of deep seated vesicles or overhanging scales of borders of the lesions were clipped and placed in 10% potassium hydroxide. These preparations should be allowed to stand for at least 24 hours in a moist chamber, being examined at intervals for fungi. The quick examination as suggested in many text-books is insufficient; brief heating will often hasten digestion. The low power of the microscope is usually sufficient; the high power should be used to confirm the findings so as not to mistake extraneous objects for fungi. The fungi appear as refractive thread like organisms, sometimes branching and occasionally short, stout, and segmented like bamboo pole; others appear in the mosaic form as described.

Scrapings were routinely planted on Sabouraud's media. Approximately 20 per cent. of the cultures grew, taking about two weeks—these were considered *Trichophyton interdigitale* except one which was *Epidermophyton inguinale*. Many saprophytes grew as well. Most authorities agree that it is practically useless to plant a culture for hyphomycetes where the alkali preparation is negative for hyphae; hence the most important laboratory procedure is the simple well known extemporaneous alkali preparation. No mosaic forms grew in this particular series. In other nonoccupational cases a small number of these mosaic forms have grown in culture as yeasts—the significance of this cannot be stated at this time.

The presence of fungus is usually interpreted as an indication of pathogenicity. In rare instances only have hyphomycetic fungi been found on skin areas considered normal even in intertriginous areas. However, it is difficult to believe that fungi of admitted pathogenic properties do not exist occasionally as saprophytes for in cases of intermittent severity they must lie dormant between attacks.

**Classification.** (Superficial Invading Fungi). A useful simple classification of the superficial invaders based on major morphological characteristics can be cited. Where the extemporaneous potassium hydroxide preparations show the

thread like forms or hyphae (often called mycelia) these fungi can be called hyphomycetes; if round, budding or yeast fungi are found, they can simply be called yeast; if both hyphae and budding forms are present, then it falls into the clinical group of thrush, the causative organisms usually being members of the monilia family. Occasionally some monilia fungi appear as hyphae only.

#### ILLUSTRATIVE CASE REPORTS

Keeping in mind the pitfalls one may encounter in properly pigeon-holing these often perplexing cases, I have divided them into three groups. Obtaining an accurate history is very necessary; the industrial aspects should be thoroughly elicited. All patients were thoroughly examined physically to detect any contributing constitutional factors.

Group I. Fungus Dermatitis of the Hands Considered Independent of Occupational Factor.

The afflicted person almost always assumes that any and all skin eruptions are due to the work in which he is employed. Naturally a fungus dermatitis can occur in any person, especially in a susceptible skin. It is only human nature to assume that one's occupation might cause a skin eruption but this assumption cannot be accepted on face value for it often means unnecessary transfer to another line of work to which the patient may not be fitted.

Case 1. J. A., a man aged 33 (observed by the courtesy of Dr. Leslie MacNaughton), had an eruption on hands, feet and face and had been unable to work for ten weeks. He was employed in a steel mill and had worked at the same type of labor for many years. No new work had been assigned to him and no external irritant could be detected. General examination was negative. The forehead and sides of neck showed discrete erythematous scaling patches; on sides of the fingers were scaling, crusting areas with deep vesicles interspersed, especially in the margins of the lesions. On the dorsa of both feet, especially the right, there were large erythematous areas reaching from the toes back almost to the ankles. Examination of scaling areas from feet and hand for fungi revealed thread like hyphae. The face manifestations were considered a dermatophytid (a toxic manifestation from the fungous foci of the extremities). With fungicidal therapy (discussed later) the patient was able to go back to work in two weeks' time.

Twelve cases were placed in this group.

Group 2. The Occupational Pursuit Deemed a Factor in the Aggravation of a Mycotic Dermatitis.

Many of these types of eruptions no doubt originate in the skin independent of any occupational factor, but the latter hastened its development and at times produced a superimposed dermatitis venenata. Chemicals especially played an important role in this group, whether from irritation or changing the biological background, it is difficult to say.

There were 29 patients in this category.

Case 2. A man aged 25 had had recurring "eczema" of various interdigital areas of hands for a number of years—not enough to consult a physician. During the past summer he took a position with a chemical manufacturing company handling a great many different preparations—several of which contained varying amounts of aniline dyes would cause a marked exacerbation of the eruption. When first observed he presented large number of deep seated vesicles on all parts of the fingers and palms. The alkali preparation was positive for short hyphae; antimycotic preparations eventually cleared the eruption.

In this type of cases the two factors are interdependent, the occupational factor here being definitely an aggravating influence. In these cases a superimposed dermatitis venenata is often present which has to be treated first with soothing preparations.

Group 3. The Fungus Infection Considered a Complication of a Pre-Existing Injury or Irritation or Contracted by Occupational Contacts.

Two striking typical cases can be cited out of seven placed in this group.

Case 3. Mr. S., aged 60, foreman of a stone quarry (patient of Dr. A. W. Stillians), was bruised on the left foot and ankle in May, 1928, "skinned," as the patient described, which healed in three days. Several weeks later "blisters" appeared in injured area and gradually spread down toward the toes. In a short time he had a bilateral inguino-crural eruption consisting of erythematous-scaling areas accompanied by considerable itching; many vesicles appeared on sides of fingers. When observed several months later discrete erythematous-scaling areas were present in the regions mentioned—no vesicles were found. Scales from the left ankle and sides of fingers showed many long hyphae.

Here it was decided that the injured region was an area of lowered resistance and favored fungus infection. That his skin was favorable to mycotic growth was shown by involvement of the several intertriginous areas.

This injury may be a factor in lowering the local resistance; a preceding dermatitis venenata from external irritants can do likewise.

Case 4. A man, aged 29, a janitor, had an acute dermatitis venenata of hands following the use of a

soap powder. He gave a history of no previous skin trouble. When first observed, he presented a severe bullous dermatitis of hands, quite characteristic of a dermatitis venenata. Soothing treatment was instituted. Marked improvement occurred and then numerous deep seated intradermal vesicles occurred on sides of the fingers. Mosaic type of fungus was found and institution of antimycotic remedies cleared the eruption.

That deep fungus infections may occur following injuries is well known.

Case 5. A man, aged 58, a furniture factory employee (patient of Dr. A. W. Stollans), had a laceration on back of right hand—several days later had similar injury and had not healed in two months' time. On examination the area of the size of a dollar had many papillary projections with pus oozing here and there. Examination of pus showed blastomycetes to be present. Treatment with x-ray and potassium iodide internally were employed with a good result.

Blastomycetic infection of the deep Gilchrist type should not be treated surgically because of possibility of serious general dissemination. Other fungi which are ordinarily deep invaders as sporothrix and actinomyces may assume occupational importance.

#### TREATMENT

The patient should be informed that this superficial mycotic dermatitis is an infectious and contagious disease and can be communicated to susceptible contacts and even to a greater extent, auto-inoculable.

The main principle of treatment is caution against using too strong preparations which will set up an eczematoïd dermatitis which may last for months. If any venenata element is present, that must be first treated.

The number of preparations used in treating superficial fungus infections are legion—almost every dermatologist has a long list. This acknowledgment in itself proves that really none are always specific. In our present state of lack of knowledge of the causative fungi, it is difficult to crystallize our therapeutic armamentarium. As the cultural aspects of the fungi are studied more, this knowledge may be sifted from purely scientific to actual clinical usage.

Local preparations are the most important and a few of the better known drugs will be cited; in the main 1, wet dressings, e. g. potassium permanganate in various dilutions, especially 1:8000, are useful in the acute stages; 2, crude coal tar and Whitfield's ointments are efficacious



in the subacute and chronic stages. The crude coal tar must be properly washed and prepared to avoid having irritating qualities. The formula used a great deal at the present time is that of the originator, Dr. Charles J. White of Boston, and consists of two parts of crude coal tar, two parts of zinc oxide, both incorporated in 32 parts of petrolatum. Whitfield's ointment has salicylic and benzoic acids as its active constituents; the strength of each are given in varying percentages in the standard textbooks. Whitfield,<sup>13</sup> himself, states the preparation to be as follows, viz: 25 grains of benzoic acid, 15 grains of salicylic acid, two drams of paraffin molle, in olei cocois nucis to make one ounce. This ointment usually produces better results in weaker strengths, although it can be used even stronger in hyperkeratotic types. The active ingredients are usually incorporated in petrolatum in this country. Various fungicides, e. g. sulphur, etc. may be added to the latter. Certain volatile oils and stearoptens as oil of cinnamon and thymol are occasionally very helpful in alcoholic solutions as shown by Myers and Thienes.<sup>14</sup> Use of proprietary preparations should be discouraged because one should use varying strengths to suit the individual needs.

X-ray treatments in fractional doses usually decrease the subjective symptoms; occasionally the relief is only temporary. Ultra violet lamp does seem to help the more chronic cases.

The best results are obtained by seeing the patient frequently in order to change the therapy as necessary. Experience in these cases has taught me that the judicious alternation of a few remedies brings better results than the use of a large number indiscriminately prescribed.

*Mode of Infection.* The mode of fungus infection, the spread from one patient to another and the possibility of one worker acting as a carrier in infecting others are subjects which cannot be discussed with finality. There is no reason why a person with such fungus eruption cannot act as a focus of infection for his co-workers; epidemic of furunculosis are sometimes believed to be caused in such a manner. Whether routine medical inspection of workers would be a help is hard to say because so many people have intertriginous foci between the toes, which never assume any importance. Charles J.

White<sup>15</sup> has enumerated some of the most common sources of infection, viz.: woolen clothes of all kinds, shower bath floors, towels, leather, sponges, suspensories, bandages and athletic goods. He was impressed with the fact that persons do not easily get this disease directly from one another; it seems that an inanimate object must form a connecting link between man and man. It is difficult to sterilize these inanimate objects; probably hot steam is the best. The factor of individual human susceptibility is another point to keep in mind; probably susceptibility is just as important as the specific organism.

#### SUMMARY

Superficial fungus infections occur on the extremities in industrial workers. Three divisions of such patients are apparent; one class in which the infection is independent of the patient's occupation; a second in which the patient's work is a definite factor in aggravating, and third, in which the fungus invasion is secondary to previous trauma or injury from irritating substances or results from occupational contacts.

A series of 48 such cases was encountered in a clinical and laboratory examination of 912 patients suffering from superficial dermatoses considered of fungus etiology. These patients had eruptions of the extremities in which fungi were found microscopically, and an attempt has been made to evaluate their importance in the cutaneous manifestations. All stubborn unexplained eczemas of the extremities in industrial workers should be examined for fungi.

It should be borne in mind that such eruptions can make a skin susceptible to irritants, thus enhancing the possibilities of dermatitis venenata. Furthermore, in the lowering of local cutaneous resistance, entrance of pyogenic bacteria can occur. Secondary to an injury, deep fungus infections can occur which may be a very serious complication. Thus these superficial fungus infections and their sequelæ are able to incapacitate a person from a few weeks to many months.

Various fungicides are used in treatment; great care should be exercised not to overtreat with strong preparations. A few remedies properly used seem to produce better therapeutic results than the endeavors to employ a large num-

ber of various preparations. The patient should avoid possible fungus contacts to avoid recontamination from improperly sterilized articles.

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#### ACUTE APPENDICITIS IN CHILDREN

WILLIAM HOLLAND BYFORD, M.D.

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My only excuse for adding to the already voluminous literature on appendicitis is that on looking over the records of my cases I find that an analysis of the symptoms and physical findings of acute appendicitis in children is vastly different from that in adults. Acute appendicitis in adults is so frequently seen and the picture so indelibly printed in our consciousness that the absence of the cardinal symptoms and signs tends to blunt our perceptions. Yet in children it is vastly more important to make an early diagnosis of an acute intra-abdominal condition than in adults. General peritonitis is much more fatal than in adults and the ability of the peritoneum to localize an abscess is not nearly so great. Moreover, a diagnosis must be made often without the intelligent co-operation of the patient, and in a patient who wishes most of all not to be examined and molested. And commonly a great part of the history must be

obtained from the parents and is at best fragmentary and inaccurate.

In twenty-one cases of appendicitis in children of twelve years old or less operated upon during the past few years, nineteen were operated upon during an acute attack, one in the interval between attacks, and one in the presence of a large post appendiceal abscess. These two cases are included in my tabulation as one case was seen during an acute attack and the other gave a clear history.

In eleven cases the pain was referred to the right lower quadrant of the abdomen. In four cases the pain was over the abdomen generally, in three over the lower abdomen, in one in the epigastrium, in one over the entire right side, and in only one in the epigastrium and later localizing in the right lower abdomen. In general the older children gave a more accurate localization of the pain. In six cases the pain was characterized as severe—all of these had either a gangrenous appendix, an appendix filled with pus, or free fluid in the abdomen. Two cases with gangrene and four with free fluid showed only moderate pain. Of these, three were twelve years old, one nine, one seven, and one five.

Nausea was present in all cases except one. This case was twelve years of age, had a temperature of 98.4°, a leucocyte count of 11,000, and gave a history of one or two severe attacks of abdominal pain yearly for five years. These attacks lasted for several days. There was no tenderness. In addition, she complained of abdominal pain in the right lower quadrant, cramp-like in character, coming on from one-half to four hours after violent exercise, as in gymnasium. A diagnosis of appendicitis was made and at operating—supposedly between attacks—a large acutely inflamed appendix was found with free fluid in the abdominal cavity. Vomiting was absent in two other cases, each with an acute inflammation and free fluid.

Fever was present in eighteen cases and absent in three. It ranged from 98.8° to 103°. In six cases only was it over 100°, and in only one of these cases was the appendix gangrenous although in three of them free fluid was present. Four other gangrenous cases showed temperatures ranging from 99.2° to 100°. In



the three cases in which fever was absent, in two it was below normal. Both of these were very acute, one with free fluid and one with many old adhesions. The average temperature for all cases was  $99.8^{\circ}$  at the time of operation.

Tenderness was present in nineteen cases, in two no tenderness could be demonstrated. In five it was termed acute; of these four were gangrenous and one contained free fluid. Of the one remaining gangrenous case, the four with free fluid, and the one with pus in the appendix itself, tenderness was moderate. All complained of some tenderness generally, but these nineteen complained of more tenderness over the right lower quadrant than over the rest of the abdomen.

The leucocyte count was in general not reliable as to the presence of infection, although three of the five gangrenous cases had counts from 17,750 to 21,000. The two others were 13,000 and 14,800. The case with pus was 11,600. These with free fluid ran from 9,600 to 15,200 with an average of slightly more than 12,000. Of the others the highest was 16,800, the lowest 7,000 and the average 12,200. The average of all cases was slightly less than 13,400. Several of the most severe cases had less than 13,000 and three less than 11,000.

Fourteen cases were seen in the first attack, of these four were gangrenous, one contained pus and three free fluid. Of the remaining seven cases, two had had "many" attacks, two "several", one had had six in the year previous to operation, one three or four in six months, and one had had one or two attacks yearly for five years. These attacks had been similar to the ones for which they were operated upon and several cases had had a diagnosis of appendicitis made during a previous attack.

In the eighteen cases operated upon during the acute attack, one was sick for four hours, and two for five days before receiving medical attention. The average length of time was slightly less than two days. Probably many of these children were sick before the fact became known to their parents. The one sick for four hours had free fluid, a temperature of  $99.6^{\circ}$  and a white count of 12,600. Of the two sick for five days, one had a temperature of  $98.8^{\circ}$ , a white count of 16,800 and a very

acutely inflamed appendix. Of those in whom the appendix had become gangrenous, one had been sick for twelve hours, one for two days and the remaining three for one day.

Of the three remaining cases one had been sick for six weeks. The diagnosis rested between an appendiceal abscess and tubercular peritonitis with the probability that the appendix was the source of trouble. The child was markedly distended, emaciated and in poor condition. At operation an abscess filling practically the entire pelvis was opened and evacuated. The cecum was bound down and no attempt was made to find the appendix. The child, nine years old, recovered uneventfully.

The other two were interval operations. In one with a temperature of  $98.8^{\circ}$ , a white blood count of 11,000, no tenderness and no pain, a moderately acute appendix was found. This child gave a history of pain after exercise. The last case had been seen previously in an acute attack and refused operation. Several more attacks occurred before operation. At operation, a large appendix was found with a short meso-appendix and many dense adhesions to the cecum.

In this series there were eight children of twelve years, two of five years and three of six years. The average age was nine years and three months. Eight were females and thirteen males. Five of the cases had pain following exercise. In one, the first attack came on after three hours of swimming. In the remaining four, there had been previous attacks and two showed dense adhesions. One case forty-eight hours after operation developed a chill, cough, pain in the chest, rusty sputum and consolidation in his left chest. Two cases showed one large lymphatic gland at the base of the appendix. Both of these cases had a very acute inflammation.

Of the appendices themselves, five were gangrenous, one contained pus, and fifteen were acutely inflamed. Of the latter, six were accompanied by free fluid in the abdominal cavity, ranging from a small amount of clear fluid to a moderate amount of slightly turbid fluid. The cases with fluid appeared more acutely ill than those without fluid, although the physical findings were no more alarming. In these cases,

too, the appendix was more edematous and the vessels more markedly injected. Two cases followed several days after an acute throat infection and quite possibly were secondary infections. Both of these had free fluid.

In five cases the appendix was adherent to the cecum. In one of these the adhesions were recent and this the first attack. One appendix was very long, had almost no meso-appendix and a definite stricture of the lumen. This child was five years old, had been sick five days with intervals during that time at which she appeared to be well. Two white blood counts made showed when without pain 8,000, and when with pain 11,200. It is likely that the appendix filled up and discharged into the intestine. One other case had a stricture of the lumen. Three of the remaining four adherent cases gave a history of many previous attacks. The fifth case was gangrenous and although no history could be obtained of previous attacks the child was but six years old and may have had several. Only one case had a fecal concretion. In four cases only could a mass in the appendiceal region be palpated. All cases except the appendiceal abscess were closed without drainage and all recovered.

Ordinarily the older the child, the more easily the diagnosis. The exclusion of pyelitis is particularly necessary in small girls. Right lower lobe pneumonia, psoas abscess and, especially in infants, colic and intussusception must be differentiated.

#### CONCLUSIONS

1. Any child with acute abdominal pain, vomiting, even slight tenderness over the lower abdomen, a moderate fever and leucocytosis should be considered to have acute appendicitis unless other definite pathology can be found to account for these symptoms.

2. A very slight fever and leucocytosis in the presence of other symptoms is no indication that acute appendicitis is not present.

3. In acute appendicitis the severity of the infection can not be determined from the symptoms and physical findings.

4. The presence of a concomitant infection which may account for some of the symptoms should not hide the fact that acute appendicitis may be present at the same time.

5. The younger the child the more necessary it is to exclude acute appendicitis.

6. The treatment of acute appendicitis in children, however mild the attack may seem to be, is immediate operation.

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#### VISUAL AND AUDITORY EFFICIENCY IN SCHOOLS, INDUSTRY AND COMMERCE

C. F. YERGER, M. D.

CHICAGO

In order to determine the incidence of defective vision and hearing in the schools, industries and in commerce, a questionnaire was sent to various representatives of the same in Illinois and throughout the country. A summary of the answers to these questionnaires follows:

##### 1. PUBLIC SCHOOLS

- a. *Defective Vision.* Fourteen Illinois cities submitted data on the percentage of defective vision of the children of the public schools, which ranged from 5 to 44 per cent. and in each case was 5, 5, 6, 6, 7, 10, 12, 13, 18, 21, 25, 31, 40 and 44 per cent. (The preponderance of the percentages below 15 per cent. is explained by the manner in which the visual acuity tests were done as many of these tests were made by teachers and nurses who are not efficient in this respect.) Eight cities reported that the physical examinations were made by nurses among which is Champaign where 5 per cent. were found with defective vision. In Evanston, in 1927, the school physicians made 3,526 physical examinations and found defective vision in 21 per cent. of the school children. The Chicago Health Department states that about 25 per cent. of the school children have defective vision. The tendency of visual defects to increase from the lower to the higher grades is shown by Mason county where defective vision was found in 23 per cent. of the high school and in 14 per cent. of the grade pupils.

Nine cities outside of Illinois reported defective vision varying from 7 per cent to 28 per cent. as follows: 7, 7, 8, 10, 10, 16, 18, 24 and 28 per cent. In Philadelphia, the percentage of defective vision varied from 1.5 per cent. to 24 per cent., according to the standard used by the various examining physicians. A very careful study of the vision of 7,637 school children of Jamestown, N. Y., was made; 18 per cent. had



a refractive error and 10 per cent. squint. In a recent study of the vision of 2,000 school children by the Public Health Service, it was found that 45 per cent. needed glasses.

b. *Defective Hearing.* Ten Illinois cities reported defective hearing which ranged from .04 to 6 per cent. as follows, .04, 0.1, 0.5, 1, 1, 2, 2, 3 and 6 per cent. (The low per cent. of defective hearing found was due to the method of testing.) It is noteworthy that the audiometer was not used in the testing of auditory acuity in the public schools of Illinois.

Eight cities outside of Illinois reported defective hearing varying from 0.2 per cent. to 20 per cent. In the Philadelphia schools, the percentage of defective hearing was from 0.2 per cent. to 1.5 per cent. with the voice test and 14 per cent. with the audiometer; in Detroit it was 0.8 per cent. with the voice and 20 per cent. with the audiometer.

In Syracuse, where a visual and auditory survey was recently made under the supervision of an ophthalmologist and an otologist, 4,021 pupils of the public schools were examined. This work was done through the co-operation of the department of health with the public schools and is an excellent example of what can and what should be done in every city. The work was done efficiently and scientifically. The visual survey consisted of ophthalmological examinations which included besides the visual acuity test, the examination of the eyes, including the fundus. 16.3 per cent. had an error of refraction; 9.5 per cent. because of poor vision and 6.8 per cent. had asthenopia. A study of these cases show a steadily increasing number of visual defects from the lower to the higher grades. A study of scholarship as related to poor vision seemed to indicate that poor scholarship was due to lack of mental ability rather than to poor vision or asthenopia. In the auditory survey the hearing test was done with the audiometer, which allowed group testing. 11.3 per cent. were found with impaired hearing, *i. e.*, a hearing loss of 9 or more sensation units; of these, 9.5 per cent. were classified as mild, *i. e.*, a hearing loss of 9 to 12 S. U.; 1.2 per cent. as moderate, *i. e.*, a hearing loss of 15 to 21 S. U., and a severe in 0.6 per cent. *i. e.*, a hearing loss of 24 to 30 S. U. The survey established that

diseased tonsils and adenoids were mainly responsible for defective hearing in children, but no report is yet available on the correction of defects and its influence on defective hearing.

In a test of hearing given to 10,367 pupils and 334 teachers in the public schools of Gary, Indiana, by means of the 4-A audiometer, equipped with 40 headphones, conducted by a nurse who was especially trained in this work, it was found that 1,054 had a loss of 9 or more S. U. in one ear, 592 in both ears; 3,306 pupils were retested and 164 were listed for special examination by an aurist.

The Chicago League for the Hard of Hearing, for the past two years has been making a survey of hearing in the Chicago public schools and thus far over 20,000 pupils have been examined. It was found that on the average two children in each classroom are in need of immediate medical attention to correct defective hearing; one child in each classroom has been neglected until he is already hard of hearing, and four children in each room do not hear as well as they should, though the cause may be of minor importance.

## 2. UNIVERSITIES

Sixteen universities replied to our questionnaire. All require physical examination of students.

a. *Defective Vision.* Data was available and submitted by 9 universities on the incidence of defective vision. Defective vision average 46 per cent. and varied from 12 to 71 per cent. In each case, it was recorded as follows: 12, 16, 29, 30, 31, 32, 37, 55 and 71 per cent. At the University of Illinois it was found that 55 per cent. of the students had defective vision and of these 42 per cent. were men and 67 per cent. were women. At Cornell University, it was found that 71 per cent. had defective vision and 31 per cent. of these wore glasses. 90 per cent. of the students at the University of Michigan are refracted by an ophthalmologist; it was found that 45 per cent. had properly fitting glasses. In but two instances were there any figures available regarding the improvement of vision with glasses. Harvard University stated that in 8 per cent there was no improvement with glasses. The University of Illinois reported that vision was corrected in 86 per cent. of the women and

in but 6 per cent. of the men that had defective vision.

b. *Defective Hearing.* Data was available and submitted from but 7 universities on the incidence of defective hearing, the per cent. in each case being .002, 2, 2, 3, 3, 3, and 19 per cent. There were but two answers to the question as to whether there was any improvement in hearing after treatment and these were in the negative.

### 3. INDUSTRY

Thirty-two of the large industrial concerns throughout the country replied to our questionnaire. Twenty-seven of these have medical departments, 22 made physical examinations of their employees, 12 make periodic health examinations, six had visual surveys made, three by ophthalmologists and three by optometrists. None had an auditory survey.

In reply to the question as to the percentage of defective vision among their employees, but 10 replied and this varied from 1 to 52 per cent. in each case being 1, 1.5, 3, 3, 8, 8, 17, 20, 25 and 52 per cent. The great variation in the results of the visual acuity tests is accounted for by the different standards required by the various industries. Only 10 replies were received concerning the percentage of defective hearing found; these were 0.25, 0.50, 0.60, 1 and 1 per cent.

### 4. RAILROADS

Twenty-three of the large railroad systems responded to our questionnaire. All have medical departments which make physical examinations of new employees. Periodic health examinations are made which vary from a complete physical examination to special examination for visual acuity, color sense and auditory acuity. These examinations vary in frequency from yearly to every two, three or four years.

Unfortunately, no statistics were available or obtainable from the railroads pertaining to the percentage of visual or auditory acuity, with the exception of the Chicago and North Western Railroad. In 1927 the medical department made a thorough and complete physical examination of nearly 10,000 men. It was found that 1,988 or 20 per cent. had visual defects and 10 per cent. had defective hearing. 70 per cent. of the passenger train conductors and 41 per cent. of the engineers had defective vision. The defective

vision of practically all of the employees were corrected by glasses.

I wish to acknowledge and express my appreciation for the services rendered by the Educational Committee of the Illinois State Medical Society without whose aid it would have been impossible to make this survey, also Miss Jean McArthur, the secretary, for her efficient cooperation.

4458 Madison Street.

## PRACTICAL PROCTOLOGICAL POINTERS

WILLIAM A. HINCKLE, M. D.

PEORIA, ILLINOIS

True hemorrhoids have their origin in the rectum above the ano-rectal line, so are covered with mucous membrane, not with skin.

Do not attempt to replace a hemorrhoid that is covered with skin. Such tumors do not belong inside and would not stay if it were possible to place them there.

A painful tumor or "pile" developing quickly at the verge of the anus and covered with mucocutaneous tissue is nearly always thrombotic in origin. Such tumors can not be replaced. They are quickly cured by enucleation of the clot and sac.

All hemorrhoids do not protrude on defecation. When small they may prolapse only sufficiently to produce a sensation of fullness or a partial obstruction with constipation.

A redundant and relaxed rectal mucosa may also prolapse sufficiently to obstruct the anal opening thus giving rise to constipation and fecal accumulation.

"Itching piles" is a misnomer. True hemorrhoids do not itch; and anal itching and hemorrhoids seldom exist in the same patient.

True pruritus ani is usually due to intestinal putrefaction or fermentation engrafted on some minor local pathology. That is why ointments do not cure such conditions.

Pain during and after defecation is very suggestive of rectal fissure.

Don't forget that a thorough rectal and anal examination will often disclose the cause of those obscure backaches with pain radiating down the back of the thighs.

Don't overlook inflamed crypts, unhealed fis-



tulae and other rectal pathology as foci of infection.

When mucus and blood appear in the stools, do not hastily diagnose colitis, or bleeding piles. Make an examination, you may find a cancer.

No physical examination is complete without an examination of the rectum.

Do not underestimate the hot Sitz as a palliative for various types of rectal and anal pain and inflammation.

629-30 Jefferson Building.

### THE DOCTORS

I like to talk with business men, with bankers and with clerks,

And I can spend a pleasant hour with any man who works,

I like to talk with lawyers, and with artists now and then,

But still I think I'm fondest of a certain class of men.

I think, although with any man I'm glad to share a jest,

The doctors are the ones I really like to talk to best. The doctors have so much to tell I want to know about,

I like to hear the surgeons talk of what they've taken out;

The brains and lungs that day removed from women and from men

And all the marvelous things they've done to make them well again.

It may be I am strange in this, but I can sit all day And listen to the wondrous words a doctor has to say.

When comes my doctor in to me to sit beside my bed, Although I've called him in to work, I hope he'll talk instead.

I like to hear the things he knows, the things he's done and seen,

For I am curious about this flesh and blood machine. And though he is a busy man, I make him earn his fee By getting him to sit and talk an hour or two with me.

Now bankers talk of money, and your artists talk of art,

And there's a sort of wisdom in the knowledge they impart,

But doctors talk of life and death, the cause and cure of pain

And there's a fascination in their speech that I can't explain.

I like to talk with doctors, and I hold their friendship great

But I hope they'll never say to me: "I guess we'll operate!"

—Edgar A. Guest.

### SEVERAL OBSERVATIONS CONCERNING THE ACTION OF LIVER DIET ESPECIALLY ON THE BLOOD CHOLESTERIN

A. Adler and L. Schiff (Deutsch. Arch. f. klin. Med., 161:282, 1928).

The influence of liver diet on various bile constituents was investigated. In patients with pernicious anemia it was shown that the cholesterol went up considerably following discontinuance of liver diet and renewed administration of liver. In order to be sure that the rise of cholesterol in the serum was not of alimentary origin, a liver extract was used, which was free from this lipid. The administration of the liver extract also had as result in the healthy human being a considerable rise of the cholesterol picture of the blood. The authors conclude from their findings that the duration of life of the red blood cells is probably lengthened under the liver therapy, without the new formation being limited at first. In normal human beings just as in patients with pernicious anemia there occurred a rise of hemoglobin, of erythrocytes, or reticulocytes, and of eosinophils. In contrast to pernicious anemia the serum bilirubin picture and the urobilin content of the stool increased. In patients with pernicious anemia and with liver disease a rise of blood sugar is to be observed following a single administration of liver extract. Color of the urine frequently becomes fluorescent green-yellow with liver therapy.

### FAVORABLE EFFECTS OF LIVER DIET IN NEPHROSIS

R. Bauer (Zentrbl. f. innere Medizin. 49:1135, 1928).

A favorable action was obtained with liver therapy in nephrosis. In nephropathic cases during pregnancy, accordingly, not only is a favorable influence of liver therapy on the diseased condition to be expected but also a positive diagnostic orientation, which might lessen the difficulty of differential diagnosis.

### Marriages

HOWARD DICK COUNTRYMAN, Rockford, Ill., to Miss Virginia Clark of Evanston, July 1.

EUGENE A. EDWARDS to Miss Beulah Eleanor Casler, both of Chicago, June 30.

PALMER W. GOOD, River Forest, Ill., to Miss Elvina Oberhelman, June 22.

WALTON E. RICHBURG, Chicago, to Miss Helen Mehl of Peoria, Ill., July 27.

JACOB SCHERMER, Granite City, Ill., to Miss Lillian Tenenbom of Davenport, Iowa, July 7.

ALVIN STEWART THURSTON to Miss Mary Planert, both of Chicago, June 18.

ISAAC VANDERMADE to Miss Ellamay Renkes, both of Morrison, Ill., June 29.

## Personals

Dr. Ernest L. Motsinger has been appointed health officer of Freeport to succeed the late Dr. Elmer H. Best.

Dr. Robert M. Sutton is the tennis champion of Peoria County, according to the *Bulletin* of the Peoria Medical Society.

Mrs. Dellora Angell Norris has given \$100,000 to the city of St. Charles for the construction of a community hospital.

Dr. Robert E. Flannery, Surgeon St. Mary of Nazareth Hospital, has been appointed Surgeon to Alexian Brothers Hospital, taking the place vacated by Dr. Hessert. Dr. Flannery has just returned from a four months' visit to the surgical clinics of England and Germany.

Dr. Charles H. Pelton, who has been appointed assistant superintendent of the Boston City Hospital, assumed his new duties about August 15.

Dr. Emil K. H. Oelke, Wheaton, won the annual Du Page County Medical Society Golf Tournament, in which twenty-two physicians participated.

An oil painting of the late Dr. Daniel M. Ottis is to be presented to St. John's Hospital, Springfield. The portrait was painted by Thomas Lockie of Pontiac.

Dr. Edmund Andrews, associate professor of surgery at the University of Illinois, has been appointed associate professor of surgery in the clinics of the University of Chicago.

Dr. Sumner N. Miller has been appointed head of the medical staff and Dr. Argal E. Hubbard as superintendent in charge of the Peoria Municipal Tuberculosis Sanitarium.

Dr. and Mrs. Warren E. Taylor, Moline, celebrated their golden wedding anniversary, August 5. Dr. Taylor formerly was superintendent of the East Moline State Hospital.

Dr. Herman M. Adler, state criminologist, has been appointed consultant to President Hoover's commission on crime and law enforcement. He will be relieved for a time from duty as state criminologist.

Miss Bertha Kaplan was awarded the annual Beaumont Memorial Fund prize (\$100) at the commencement of the University of Illinois College of Medicine for her study of ameba carriers in Chicago. The prize fund was created in 1926 by Dr. Frank Smithies.

Dr. George D. Heath, Jr., formerly health

commissioner of Bloomington, has been appointed health officer of Florence, S. C., succeeding the late Dr. Percy H. Brigham.

Governor Emmerson has appointed Dr. Sidney D. Wilgus, proprietor of a sanatorium in Rockford, as state alienist for four years to succeed Dr. Alexander S. Hershfield of Chicago. Dr. Wilgus was formerly superintendent of the state hospitals at Elgin and Kankakee.

For fifteen years Dr. Wilgus was connected with the New York State Service; in 1916, he made a survey of all eleemosynary institutions of the state of Tennessee for the national committee of mental hygiene; the same for Connecticut in 1916; for Indiana in 1917; and for New Jersey in 1920. He is a member of the Chicago Neurological Society and of the American Psychiatric Association.

Dr. Stanhope Bayne-Jones, professor of bacteriology, University of Rochester School of Medicine, gave a public lecture at the University of Chicago, August 8, on "Motion Pictures in the Study of Microbiology;" Robert G. Gustavson, professor of chemistry, University of Denver, spoke on "The Female Sex Hormone."

Governor Emmerson has appointed the following physicians members of the board of public health advisers: Dr. James T. Hutton, president-elect, Chicago Medical Society; Dr. Arnold H. Kegel, health commissioner of Chicago; Dr. William A. Evans, former health commissioner of Chicago; Dr. Clifford U. Collins, Peoria, and Dr. Rufus J. Coultas, Mattoon. These members serve without pay.

Dr. H. H. Fletcher of Winchester, has been appointed managing officer of Illinois Soldiers and Sailors Home in Quincy.

Dr. C. H. Diehl has resigned as superintendent of Lincoln State School and Colony.

## News Notes

—The new St. Therese Hospital in Waukegan, costing about \$1,250,000 and containing 250 beds, has been dedicated.

—The cornerstone of the new \$500,000 addition to St. Francis Hospital on Ridge Avenue, Evanston, which will accommodate 100 additional patients, was laid, August 15.

—The state department of health, August 21, reported that 5,950 persons were accidentally killed in Illinois last year. The principal causes



were automobiles, 1,745; falls, 961; railroad mishaps, 662; burns, 416; drownings, 383; injury by machines, 139; street cars, 184; firearm wounds, 133; poisoning, 131.

—True bills were voted by a grand jury, July 30, naming five men as members of a gang that sold licenses to applicants who were not properly qualified to practice medicine. Those indicted are reported to be: W. H. H. Miller, former director of the state department of education and registration; L. Mitchell Blaine, who posed as a physician; Harry Goldstein, alias Senator Brow-ski, of Springfield; Albert Barron, a prospect finder, and John Torbert.

—The decrease in the birth rate in Chicago has been less than 15 per cent, while that for the U. S. Registration Area as a whole has declined more than 17 per cent, according to the Chicago School of Sanitary Instruction. This decline in the birth rate has been offset by a decrease in the infant mortality rate from 108 per thousand births in 1915 to sixty-six in April of this year, or 38.7 per cent. In the last calendar year, 59,016 babies were reported born in Chicago.

—The one hundred and eighth medical regiment attached to the thirty-third division left for the annual encampment at Camp Grant, August 3. The regiment has two ambulance companies, a hospital company, a service company, the division surgeon's staff, and regimental headquarters. Col. James J. McKinley is in command. Its medical officers are members of the Chicago Medical Society. Reserve officers were attached to the regiment for training during the encampment.

—From 1918 until 1928 the cancer death rate of Illinois rose from 2 to 4 per cent each year, the total increase having been about 30 per cent, or from 82 per hundred thousand of population to 106. The number of deaths reported as due to cancer in Illinois in 1928 was 7,887. The state health department, in studying these reports, says that cancer among fat persons is higher than among underweight people or persons of normal weight. The stomach was the seat of cancer more than twice as often as any other organ.

—The medical staff of the state department of health has examined all school children in Mason County for physical defects. On the basis of these examinations, the department estimates the number of physical defects in the 1,125,000

children in Illinois who will soon return to the classroom. The department says that 935,000 of these children will have defective teeth; about 562,000 defective throats with enlarged tonsils predominating, and 235,000 some form of defective vision, while 800,000 will not have been vaccinated against smallpox nor immunized against diphtheria.

—The health commissioner of Chicago, Dr. Arnold H. Kegel, sent out notices to 1,500 bakeries, July 29, restricting the use of cream filling in cakes and other bakery goods for the next six weeks because of the ease with which such filling becomes infected in the hot weather. The health department has received reports in the last two months of 153 cases of illness due, it is said, to the eating of infected "cream filling" in bakery goods. An outbreak of food poisoning was reported, July 28, that was believed to have been due to eating coffee cake. At least twenty-nine persons were affected, only one of whom became seriously ill. The bakery that supplied the cake was closed and an investigation undertaken to determine the cause.

—A campaign has been launched to rescue Chicago's great hospital district on the west side, said to be one of the greatest in the world, from its squalid surroundings by having the territory around it made into a park district. A committee, representing the west side medical institutions, proposes to have the city acquire possession of all nonmedical property from Van Buren Street to Roosevelt Road and from Paulina Street to Ogden Avenue and to remove the poor type of building now on the grounds and convert the surrounding property into a park. The spokesman for the committee was Asa Bacon, superintendent of the Presbyterian Hospital. The county commissioners, the West Town Chamber of Commerce and unofficially the Chicago Plan Commission have approved the plan. The proper care of the sick in this area necessitates providing better surroundings. With this improvement will come the expansion of the institutions. In this area are the county hospital, Presbyterian Hospital, University of Illinois College of Medicine, Rush Medical College, Loyola University School of Medicine, dental schools, laboratories and other hospitals. The plan will be placed before the public in the hope that it will approve a bond issue.

—Through arrangements made in a conference between the office of the state's attorney, represented by Mr. Bellows, the department of registration and education, represented by Mr. Clyde I. Backus, Chief of Police Russell, and representatives of the American Medical Association, the police department of Chicago attempted to secure during the last week in August, a record of every person in Chicago who undertakes to heal the sick, including name, address, type of healing practiced, school and year of graduation, and year and method of licensure. The cards will be checked through the state department of registration and education and at the headquarters of the American Medical Association to determine the nature of practice now going on in Chicago and the number of persons practicing without a license.

## Deaths

DORWIN DELOSS BARR, Taylorville, Ill.; Miami Medical College, Cincinnati, 1890; a Fellow A. M. A.; formerly secretary of the Christian County Medical Society; aged 73; died, August 9, of a skull fracture received in an automobile accident.

OSCAR CARL BREITENBACH, Waukegan, Illinois; University of Michigan, 1903; a Fellow A. M. A.; Fellow of the American College of Surgeons; member of the American Academy of Ophthalmology and Otolaryngology; member of the Indiana Academy of Ophthalmology and Otolaryngology; member of the Chicago Laryngological and Otological Society; Secretary of the Attending Staff of the Victory Memorial Hospital; member of Staff of St. Therese's Hospital; consulting oculist and aurist Lake County General Hospital; medical examiner for the Aeronautics Branch of the Department of Commerce; aged 51; died, August 14, of pneumonia and carbuncle of the lip.

JOHN ADAMS CHAFFEE, Oakwood, Ill.; Medical College of Indiana, Indianapolis, 1897; aged 60; died, June 23, at St. Elizabeth's Hospital, Danville, following an operation for removal of the prostate.

JOSEPH SAMUEL COHN, Chicago; University of Illinois College of Medicine, Chicago, 1910; a Fellow A. M. A.; formerly instructor in pediatrics at his alma mater; associate attending pediatrician to the Mount Sinai Hospital and attending dispensary physician to the City of Chicago Municipal Tuberculosis Sanitarium; aged 43; died, July 23, of sinus thrombosis, following mastoidectomy.

JAMES WILSON CONNELLY, Farmington, Ill.; Rush Medical College, Chicago, 1890; aged 67; died, July 14, of heart disease.

WILLIAM HENRY FOX, Chicago; Victoria University

Medical College, 1886; aged 69; died, July 29, of angina pectoris.

CHARLES EDWIN JONES, Oak Park, Ill.; Miami Medical College, 1874; Bellevue Hospital Medical College, New York, 1876; practiced in Chicago until his retirement in 1926; aged 78; died suddenly, July 29, of heart disease.

STEPHEN W. JONES, Danville, Ill.; Medical College of Ohio, Cincinnati, 1878; a practitioner in Vermilion County for 56 years; aged 77 years; died August 8, of heart disease.

SAMUEL S. KEHR, Sterling, Ill.; General Medical College, Chicago, 1884; aged 76; died suddenly August 10, of heart disease, while attending a patient.

HENRY FOSTER LEWIS, Wooster, Ohio; Harvard University Medical School, Boston, 1888; a Fellow A. M. A.; professor of physical diagnosis, College of Physicians and Surgeons, Chicago, 1891-1903; associate, instructor and assistant professor of obstetrics and gynecology, Rush Medical College, Chicago, 1899-1907; professor and head of the department of obstetrics and gynecology, Loyola University School of Medicine, 1910-1918, and formerly professor of obstetrics at the University of Illinois College of Medicine; served during the World War; in 1895 curator of the museum and for many years on the staff of the Cook County Hospital; aged 65; died, August 5.

JOHN T. LLOYD, Baldwin, Ill.; Keokuk (Iowa) Medical College, 1891; member of the Illinois State Medical Association; aged 64; died, July 7, as the result of a cerebral hemorrhage.

JOHN J. MULDOON, Chicago; Northwestern University Medical School, 1894; formerly chief of staff of St. Vincent's Hospital; chief medical examiner of Catholic Order of Foresters; member of staff of Alexian Brothers Hospital; aged 63; died, August 22, of carcinoma of stomach.

GEORGE DARWIN PREWITT, Peoria, Ill.; Missouri Medical College, 1890; aged 68; died, August 5, of chronic nephritis.

LAWRENCE EDWARD SLEEPER, Chicago; Northwestern University Medical School, Chicago, 1904; a Fellow A. M. A.; member of the Nebraska State Medical Association; aged 51; died, May 25, of paresis.

WILLIAM T. SLOAN, Peoria, Ill.; Bellevue Hospital Medical College, 1874; member staff of Proctor and St. Francis Hospitals; aged 80; died, August 1, following invalidism of three years on account of fracture of the hip.

CHARLES P. SPANN, Thebes, Ill.; College of Physicians and Surgeons, Keokuk, 1888; aged 80; died, July 28, of heart disease.

GRANT ARNOLD STOCKDALE, Coal City, Ill.; University of Nebraska, Omaha, 1893; president of the board of education; captain in Medical Corps during the World War; aged 59; died, August 4, while on vacation in Boulder Junction, Wis.

EMIL T. TOHULKA, Glasford, Ill.; St. Louis College of Physicians and Surgeons, 1906; aged 57; died suddenly, July 26.

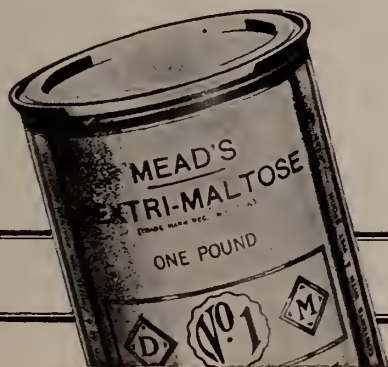




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# Illinois Medical Journal

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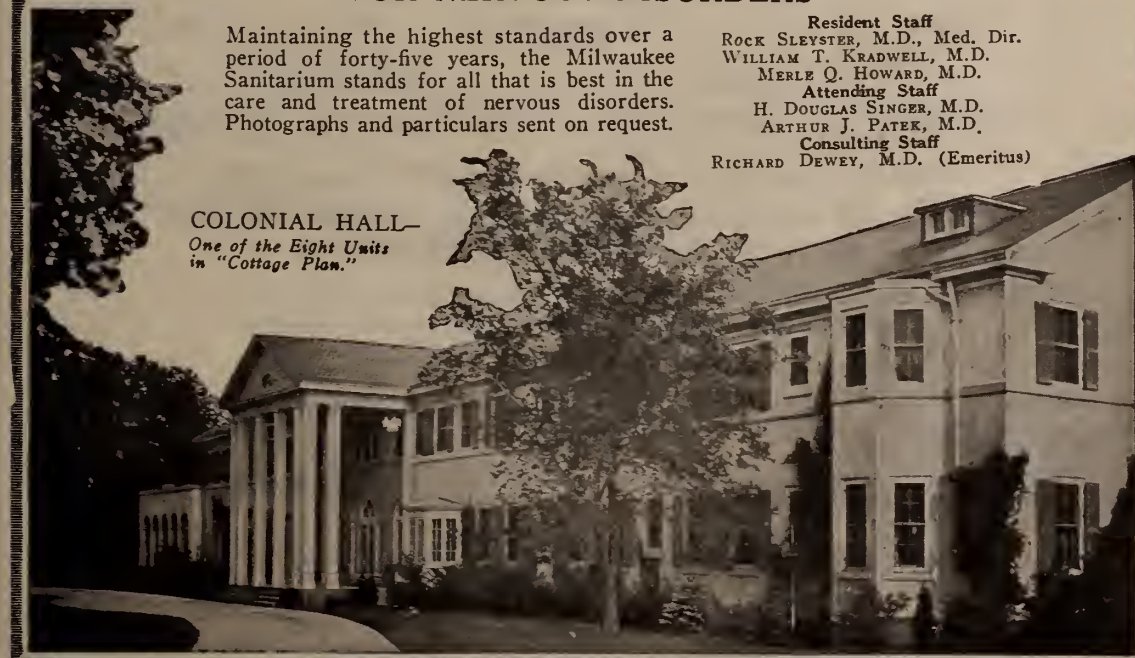
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# ILLINOIS MEDICAL JOURNAL

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## Editorial

### CHAIN STORE OR DEPARTMENT STORE MEDICINE IS DETRIMENTAL TO THE WELFARE OF THE PUBLIC. IN NEW YORK STATE A LAY CORPORATION CANNOT PRACTICE MEDICINE

State operation and state control of medicine ruined medical practice in Germany and has given the people of that country the worst medical service administered in any civilized country in the world.

When an institution such as a university or a corporation enters into the practice of medicine as is the case in many instances at the present time, there come up certain points of interest to the medical profession.

A university is endowed for education, research and scholarship, and when it enters the practice of medicine it is dealing unfairly with the private practitioner. "Unfair," because this institution has the enormous advantage of reputation and size to attract patients. "Unfair," because of endowments it is able to practice medicine at much lower rates than must prevail in private practice. "Unfair," because it is the only department of the university which even considers entering into the business which it aims to teach. "Unfair," because even if it charges large fees its prestige would make it an impossible competitor with the private practitioner.

Much is being said by economists about only the very wealthy and the very poor getting the maximum of medical service, and so leaving the great middle class unable to procure the so-called maximum service. This statement is not accepted by thinking medical men. We believe that the private practitioner is giving good service and sees that his patients get what they need at a price they can afford to pay.

There is a strong tendency at the present

time to systematize or machine out the most desirable thing in the practice of medicine and that is, the very personal contact of physician and patient. This personal contact cannot be removed without jeopardizing the best interest of the physician, the patient and the public. Chain store or department store medicine is detrimental to the welfare of both the physician and the public.

It is important under the present standard of ethical procedure that groups practicing medicine must adhere to the same ethical principles as regulate individuals. Because of their size and influence, corporations are in no way relieved of the ethical responsibility that applies to general practitioners. If the staff of corporations engaged in the practice of medicine fails to recognize this fundamental principle then all the men connected with the staff should be amenable to the same discipline as if they were individual practitioners.

In Illinois a lay corporation cannot practice law and the bar association sees that it does not. With our legislature composed largely of lawyers we fail to understand why the legislature is not willing to throw the same safeguards around the medical profession that it grants to the legal profession.

---

#### UNIVERSITY PROFESSOR GIVES MEDICAL PROFESSION ACCOLADE FOR EARLY RECOGNITION OF MODERN TENDENCY TO SOCIALIZE UNITED STATES BY CULTIVATION OF CHARITY CROP

That the just man is notoriously cheated of his dues and the unjust man showered only too often with the just man's desserts, Prof. Guy Dyer of the economics department of Vanderbilt University took as his inner text at the annual meeting of the Columbus Academy of Medicine at Columbus, O. He deplored the fact that "Charity in the United States is growing faster than anything else."

Prof. Dyer maintained that the medical profession was among the first to note the increasing tendency to socialism in America, and "has been responsible in a large way in throttling the

growth of this menace to self-respect and independence."

Further, Dr. Dyer remarked, "It isn't the duty of the government to go into any sort of business except that which is a vital matter and which cannot be entrusted to private hands. As a rule any business conducted by the government is run against the interests of the people."

A policy of organized medicine is that "the practice of medicine," whether curative or preventive, is not the proper function of the government, and that the state should not do for the individual what the individual is able to best do for himself.

The socialistic view of government employment for everyone is a bad one, akin to our present ideas of charity. Charity is growing faster in this country than any other thing. It is an evil greater than a nation-wide epidemic of typhoid fever for it destroys the soul of man. Let man go hungry for days, let him wear rags, but let him learn to depend upon himself. The government should take care of abnormal and criminal people, but no others. The goal of every charity organization should be its own self-destruction. For the more people we help, the more will seek us out as something to lean against."

The medical profession was among the first to note and point out this "evil" to which Professor Dyer refers and has been successful in a large way in throttling the growth of this menace to self respect and independence.

The oyster has no problems or worries, lives in an apartment of his own, has children which are all taken care of by some special amendment, and for the life of me I can't tell by looking after teaching school for 25 years, whether an oyster is dead or alive. I doubt if the oyster knows himself.

The founders of our country made no mistake when they placed the symbolic eagle above the American flag. When God made the eagle, He said: "There you are, all equipped to fly. I'm giving you your freedom and expect you to get along by yourself without depending too much on Congress." And the eagle shivered in some dismal treetop, went hungry now and then, but learned to take care of himself.



## AMERICAN MEDICAL EDITORS WILL PUBLISH A JOURNAL OF THEIR OWN

The American Medical Editors and Authors Association, formerly the American Medical Editors association, is about to publish a new magazine that will be called "The Medical Mentor."

This is the latest development of one of the oldest literary organizations of medical men in this country.

Membership is enrolled so far at 1,000. This is said to constitute practically every leading medical author and editor in the country. Although scheduled for September publication the first issue has been delayed. This will not be a competitive journal it is said in any way. Dr. H. Lyons Hunt is editor and among his associates are prominent medical men from all over the country.

Promised activities of the new periodical include according to the prospectus:

*Monthly Publication.* This Journal will be a constructive help for other journals. In place of original articles, will be a monthly medical index covering as far as possible the contents of future issues of the journals represented in our association, that is the title of articles, names of contributors, journals and month wherein the articles are to appear.

This will be of immense value to every journal included in this index. It will keep the profession informed as to what is appearing monthly.

Also a department headed "History of Medical Journals," a history of two or three leading medical journals, will appear each month.

The journal will carry the news of the association, as well as of sections devoted to subjects of vital interest to editors, authors and medical writers. It will be an "open forum" for exchange of ideas between members.

The advertising pages will be a credit to the journal as well as to the association.

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## CONTENTION IS MADE THAT AVERAGE LENGTH OF LIFE IS SHORTENED

Despite all our modern egotism, in the vernacular "we are not as smart as we think we are."

According to Prof. C. H. Forsyth of Dart-

mouth College, the average length of life is declining. Prof. Forsyth contends that while science has managed to minimize juvenile mortality, and more especially infantile mortality that the odds are decidedly against the American adult of today living as long as his father or his grandfather.

From Hanover, N. H., comes this statement:

In spite of the efforts of physicians and public health workers, and notwithstanding the proud boasts of some of them, we are not living as long as men of earlier generations, and the average length of life is declining, Prof. C. H. Forsyth of Dartmouth College has found. For the American adult, the odds are at present heavily against his living as long as his father or grandfather. Prof. Forsyth declares in a report in a recent issue of *Science*. The average American adult is in the midst of a decidedly losing fight which he cannot win until he applies himself energetically to being superior to his environment.

Prof. Forsyth takes issue "with those who are so elated with results obtained in their own immediate fields leading to significant reductions not only in certain death rates but also in the prevalences of certain diseases that they feel justified in predicting marvelous increases in the average length of the whole of life in the no great future."

"Most of these optimistic authorities have failed to appreciate that practically all these results have been attained in children's diseases and that little or no attention has been given to the situation beyond the prime of life," stated Prof. Forsyth.

The expectation of life at advanced ages, that is, the number of years that a man of 50, for example, may expect to live, is definitely declining, Prof. Forsyth found from his exhaustive study of many mortality tables and population statistics.

"The expectation of life from age forty-five or fifty on is the lowest of which we have any record—far lower than it was even forty years ago—and it is still going down, not up," Prof. Forsyth declared. "With all the improvement in the world at the early ages, the present downward trend at the advanced ages, if unchecked, will continue to dominate and produce a greater and greater net decline in the average length of life."

A DEPARTMENT OF EDUCATION SIMILAR TO OTHERS OF GOVERNMENT IS NOT REQUIRED, SECRETARY WILBUR SAYS NO

That there will be no federal department of education is welcome news to those whose ideas about bureaucracy do not include the socialization of the American public school system. Despite the arguments set forth by theorist politicians the country, thanks to the good common sense of Secretary Ray Lyman Wilbur, will not be burdened with such a further load upon the tax-payers.

The situation is well epitomized in an editorial appearing recently in the *New York World*, May 7, 1929. This reads:

Nothing could be more emphatic than Secretary Ray Lyman Wilbur's statement before the American Council of Education that "a Department of Education similar to the other departments of the government is not required." There has been a good deal of gossip to the effect that Mr. Hoover favored a Federal Department of Education, and that Mr. Wilbur would be made its first head. A decisive statement was needed to clear the air. It is a heavy blow to the National Education Association, but it will be applauded by all who believe that it would be most unfortunate to extend Federal supervision into a field that is best left to the states and the local communities.

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LAY JOURNAL RECOGNIZES THAT "GET ALONG BY YOURSELF" POLICY RATHER THAN PROMISCUOUS CHARITY IS MODERN NEED

Readers of the appended editorial from the *Ohio State Journal* entitled "Popular Fads Criticized" and written in comment upon an address by Professor Guy Dyer, published editorially elsewhere in this issue, cannot fail but applaud the sentiments expressed therein, in part the editorial says:

"There was a ringing note of American courage and independence in the address of Professor Dyer.

"The world needs that address and others like it delivered in many places. It needs to be aroused from its smug complacency, its false line of thought and brought face to face with the real facts of life and citizenship.

"It was rare and important public service for a man like Prof. Dyer, with 25 years of university experience and observation, to denounce and cast aside as spurious the present-day popular craze for social service, professional charity, welfare and uplift work. He made no mistake when he said the overdevelopment of that work would destroy the soul of man. He thought man should be taught to depend on himself, not on charity, not on uplift, not on social surveys, not on welfare. That would develop independence, the social service craze develops dependents.

"Many will agree with his declaration that the socialistic view of government is bad, that charity is the most rapid growth in this country, without results to justify its extension. In all cities the more that are helped, the more there will be to lean on the agency that helps. The result is a decreased independence, and a weaker citizenship.

"For years there has come trooping from the colleges and universities each year an army of young men and women with some training, possibly some natural talent, who intend to engage in social service work. The social service organizations are multiplied, charity more highly organized, executives, assistants, and an army of associates placed on the payroll to consume much of the funds designed to be used for human relief. Records are multiplied, the work professionalized with results of uncertain value, but the army of social workers grows with the years and each worker places high value on services. Charity administration has become extremely costly.

"In these days when the professional welfare and social uplift guild movement is in full flower in many places, real courage is needed for a university professor to arise and point out the fallacy of the movement, and tell the plain truth on the subject. Those who have watched the development and operations will appreciate the correctness of his analysis and the soundness of his criticism. Such addresses may help clear away the fog and promote clear thinking on that important subject.

"Get along by yourself, is the message he would shout into the ears of the young men and women of the world today. Get out into the world and win your own way in useful employment, not in idleness in occupations the world does not require for its best interests."



# LAY EDITOR ENDORSES DICTUM OF THE COBBLER AND THE LAST; SUG- GESTS DOCTORS KNOW MORE ABOUT MEDICINE THAN THE AMBITIOUS LAITY

Daily there are numerous indications that the lay press at least, is of the opinion that the medical confraternity knows something about its own business affairs and the fashion in which these affairs should be conducted. Quite to the point is this editorial that appeared July 15, 1929, in the *Chicago Tribune*.

## LEAVING IT TO THE DOCTORS

The secretary of the interior, Ray Lyman Wilbur, speaking at the convention of the American Medical association, told the doctors that they would have to find a way to reduce the cost of medical care to the middle classes or a way will be imposed upon the doctors. Dr. Wilbur speaks with the authority of his office in the government and as chairman of a national committee which is studying the question involved in medical charges.

The fact that Dr. Wilbur found it possible, at a convention of physicians, to state his views thus bluntly is, in itself, the most hopeful aspect of the matter. No one who has experienced or observed the effect of a siege of illness upon the budget of a family in moderate circumstances can doubt the need for modifying present conditions; but it is no less true that the ablest practitioners of all sorts, the leaders of the profession, are themselves the leaders in the movement for the reform.

It is not easy to work changes overnight, particularly if the changes upset long standing professional relationships and standards. Any one who has observed the resistance of lawyers in our legislatures to the removal of flagrant abuses in the criminal and civil codes will regard with admiration the willingness of doctors to examine the traditions of their profession. If there is hesitation, it must be remembered that doctors as a class are far from being overpaid, and under the circumstances it is scarcely remarkable that the majority of the humbler members of the profession are willing to accept changes until they have some assurance that their livelihood is not to be further imperilled.

A solution of the problem of medical care for the middle classes which would result in im-

poverishing the doctors would be worse than no solution at all, for it is to the advantage of the community to attract able intellects to the practice of medicine. This position must be conceded, we believe, by even the most ardent advocates of reform. It has been conceded by the sane supporters of Dr. Schmidt in his controversy with the Chicago Medical society. While it is no doubt true, as Dr. Wilbur said, that if relief for the middle classes is not devised by the doctors it must be imposed upon them; the probability that they will lose the initiative is for the present not great. In spite of the Schmidt case, laymen have not lost confidence in the good will of the medical profession in its relations to the public.

## DOES MR. HURLEY CARE TO EXPLAIN THE QUESTIONS RAISED BY THIS CORRESPONDENT AS TO THE PURPOSED "TEMPLE OF HEALTH"?

The ILLINOIS MEDICAL JOURNAL feels that the writer of the following letter should have the place in the columns of this periodical that the earnestness of the communication deserves. Upon so all important a topic as "cutting medical costs and hospital care" every citizen deserves to be heard from.

*To The Editor:*

The recent epidemic of talk regarding the high cost of medical care and the necessity of reducing it precipitates a number of queries in my mind. The curious thing about the talk is that it emanates from the prominent and extremely successful business men. Even our philanthropists who are giving so many millions of dollars to reduce the cost of medical care to the so-called middle classes have made their millions and attained their success largely by failing to pay to these same middle classes wages and salaries, usually the latter, sufficient to enable them to buy medical care and other necessities of life. Apparently they now wish to make restitution in a small way by compelling the doctor, the nurse and the hospital to contribute much in the way of medical care to these classes off whom they have made their millions.

You will recall that Mr. Hurley's hypothetical case on which he was going to base the Temple of Health was about as follows: A man of great

value to his organization, but drawing a small salary; please note that combination, is taken ill, he consults his family doctor who does not make a diagnosis with sufficient rapidity, so Mr. Hurley steps in, sends the man to a prominent heart specialist—he then sends him to a lung specialist—then he sends him to a stomach specialist, a kidney specialist and so on. To each of these specialists he visualizes a \$50.00 fee and estimates that he expends a total of \$500.00 for the man's diagnosis. There are several things wrong with this picture. First, if the man is so valuable Mr. Hurley's organization should pay him a better salary. Second, if Mr. Hurley will keep out of the picture and allow the family doctor a reasonable time, he will make a correct diagnosis in about 90% of the cases, and if he needs consultation he will not call in such high priced specialists for a man of moderate means. The public as represented by Mr. Hurley and other philanthropists deery specialists and their charges, but note how prominently the specialist comes into the picture when the philanthropist begins to manipulate the diagnostic machine. Finally if Mr. Hurley were to establish this Temple of Health or Fountain Head of all diagnostic wisdom, it would not be staffed by the specialist he has in mind but by men of less experience and less ability than the family doctor from whom he originally turned. The only thing available would be plenty of laboratory work and machine-made diagnoses which are still failing to cure patients or even get at the bottom of their trouble. No amount of gastric analysis, x-rays or blood counts will discover the cause of a man's gastric complaints if they are primarily due to the loss of a life time's savings or to a marriage that is headed for the rocks.

It does seem to me that much of this talk about doing something for the workers may be in the nature of a smoke-screen or a back-fire. There are about five hospital beds per thousand population of Chicago, the average stay in a hospital is ten days per patient. Allowing that there are three million people in Chicago which with 15,000 hospital beds means that about 500,000 people are patients in a hospital each year. In other words, less than 16% of the city's population come in contact with a hospital each year, one-quarter of this number are taken care of in

charity beds, then 12% of the population which are affected in any way by the cost of hospital care. Perhaps four times as many consult the doctor each year. Part of this group are entirely able to pay for any reasonable amount of medical and hospital care, so that the most that the philanthropists could do along this line would be only a drop in the bucket. But if he were to look at the other side of the picture and decide to pay wage earners and salaried employees reasonable living wages, he would at once benefit not 12% of the population but some where around 75%.

I am wondering if this thought may not have occurred to some of our philanthropists and big business men, and the defense of their own pocket book motivates this talk of reducing medical care much more than does a sincere desire to benefit the Dear Public.

With the enormous profits now being reported by banks, by railroads and industries of all sorts, it would seem the time might be right to talk to the American Federation of Labor about a raise in wages and about organizing the so-called white-collared class rather than to spend too much energy discussing a problem which affects comparatively few people.

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### THE PATIENT UNDER ANY CIRCUMSTANCES SHOULD NEVER BE OUT OF CONTROL OF GENERAL MEDICINE

#### THE GENERAL PRACTITIONER STILL HOLDS THE REINS

The general practitioner is the essential factor in giving efficient medical service to the public.

Over-specialization and over-hospitalization is proving too great a burden for the body politic to endure. Continuation of the present situation is bound to bring about the undesirable system of state medicine.

Medical circles recall that famous surgeon of a generation ago who used to say of himself, "I am a physician who practices surgery."

For a while this basic truth of the profession was submerged in a stampede of running after false gods, as, with a few Cadmean characteristics, the crop of specialists, good, bad and indifferent suddenly sprung up in all fields of medical endeavor. But "truth crushed to earth" or pushed aside eventually comes into its own.



The progress of medical and scientific achievement has revealed more trenchantly than ever the growing recognition that all forms of special practice are essentially integral branches of general medicine.

Since the aim and purpose of general medicine is to conserve and restore the functioning of the body, of which the functions of special organs and areas are integral parts, it is obvious that specialization is a by-product of general medicine, rather than, as many would like to suppose, general medicine merely a side issue to specialization.

Purely local diseases are few and far between. This fact of marked clinical significance was for a time obscured by the parade of the specialists. With renewed clarity is the profession becoming enlightened that the vast majority of regional disorders are part and parcel of systemic disturbances that can be properly evaluated and intelligently treated only by dealing with this part of their nature. Under the old policy of regional isolation numerous diseases of special organs hold a record of being almost baffling as to the nature of treatment indicated. When treated as ocular expressions of some systemic disorder conditions have been destroyed or ameliorated that were unyielding to merely local pathology. Among ophthalmologists there has for years been a growing conviction that of this nature were glaucoma and chronic sinusitis. More recently have come the investigational work and findings of Daniels of the University of Iowa, and his demonstration of the incidence of paranasal sinusitis and lack of vitamin D. Though the profession will hardly accept the doctrine that diet alone is responsible for sinusitis, the profession, to a man among general practitioners, will be quick to grasp the import of the indication it affords of the systemic nature and pathology of pathologic entities that in many instances might unfortunately be regarded as purely local and combatted with exclusively local measures. Regional diseases should not always be approached from sheerly regional angles.

All specialty diseases should be given the benefit of the doubt that their treatment may not be entirely outside of the province of the general practitioner. Outside of special local measures demanded by the actual site of the lesion, both for etiological explanation and for

basic treatment only too often must the specialist consider the realm of the general practitioner. The patient in any condition and under any circumstances should never be out of control of general medicine.

That a correct anatomic and functional diagnosis and possibly correct treatment of the patients of any average community may be successfully undertaken by an able general practitioner is not to be denied. In this connection it is both instructive and interesting to consider on this subject the ideas of Dr. Frank Billings.<sup>1</sup>

"I have stated that the value of the application of group practice is limited. I believe that this is true. Ostensibly the group is formed for the avowed purpose of providing all patients with an accurate diagnosis and efficient treatment. This is made possible through the services of clinical and laboratory specialists and available equipment to obtain a precise knowledge of the physical and function condition of the patient and to afford efficient general and special treatment, including hospital care, if that is deemed necessary. First, let us inquire how many patients of an average community require the application of these precise methods of diagnosis to arrive at a true understanding of the real condition, and how many of these patients require hospital care. Based on long experience in consultation and in general hospital and private practice, it is my opinion that a correct anatomic and functional diagnosis can be made in from 80 to 85 per cent of all the patients of an average community by a qualified, industrious, painstaking general practitioner by the sole application of the trained mind, the special sense, the hands and an always available simple laboratory equipment. Likewise, approximately 80 per cent of the patients will receive efficient management and treatment as ambulatory or house patients. Of course, it is advantageous that every hospital, with the possible exception of some very small or special institutions, should have the necessary laboratories, equipment and trained technicians to make these precise examinations and to afford adequate treatment of the few patients who really require their use.

"The truth is, the splendid knowledge which

1. Nu Sigma Nu Bulletin, April, 1929: Presidential address "Significant Landmarks in the Practice of Medicine of Fifty Years." Delivered at the twenty-fourth convention of Nu Sigma Nu, December, 1928.

modern medicine has made available in the diagnosis and treatment of disease is misapplied frequently, with unfortunate derogatory effect on the public and the tendency to demoralize some members of the medical profession. This method of practice and the false impression gained by the public through private and public group medical and surgical service with the usually attendant high cost, are tantamount to commercialism. The public is slowly but surely becoming aware of these conditions in medical practice. Evidence of this point of view of the public is expressed by lay people in cities and in the country. Frequently the best families of the city inquire whom they may secure as a family physician. In this connection we must remember that the splendid character and accomplishments of the United States government are due in no small measure to the character-forming factor, the family home. The modern tendency in the cities, especially among the foreign-born population, is to seek tenement habitation, which tends to minimize the value of family life and to disregard the responsibilities of citizenship. This tends to engender the worst forms of socialism, and disregard of individual and community responsibility in the observance of the laws of sanitation, and also to promote disease and poverty. The future safety, prosperity and health of the people and the maintenance of all the benefits which this republic affords demand the preservation of the character-forming family home.

"As a factor in this necessary principle of community welfare, the family physician and his domiciliary visits are essential. It is recognized that the general practitioner, both in the city and in the country, lacks sufficient hospital facilities in the care of his patients. This lack is evident in some of the rural districts of practically all the states of the Union. Some feasible constructive program should be adopted which will afford justice to the taxpayers and to the members of the medical profession, and which will provide better hospital and diagnostic facilities where they are needed. We must, however, keep in mind the fact that a majority of patients do not require the application of unusual and refined methods of diagnosis and also that a majority do not require hospital care."

STATE MEDICINE, MEDICAL CHARITY, MEDICAL FREEDOM, MEDICAL ECONOMICS AND MEDICAL ORGANIZATION ARE TOUCHED UPON ABLY IN THE INAUGURAL ADDRESS BY DR. CHARLES B. REED, PRESIDENT OF THE CHICAGO MEDICAL SOCIETY.

For those who wish an interesting and able bird's-eye view of the present needs, menaces and possibilities at the very throat of the medical profession today, recommendation is made of the perusal of the inaugural address (published elsewhere as an original article in this number of the JOURNAL) of Charles B. Reed, M. D., President for the coming year of the Chicago Medical Society. Dr. Reed's sane yet understanding epitome of the situation deserves profound consideration on the part of the profession. It is well indeed to bear in mind the comment of Dr. Reed's (state medicine means regimentation and nullity). The dangerous tendency of legalized authority to usurp power in other pursuits is now unfortunately evident in medicine. The consequences have been bad as elsewhere. They will be disastrous in medicine.

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#### ILLINOIS ELKS ASSOCIATION WILL CO-OPERATE WITH ILLINOIS STATE MEDICAL SOCIETY IN WORK FOR CRIPPLED CHILDREN CLINICS

The attitude of the Illinois Elks Association in preparing to co-operate with the Illinois State Medical society in the crippled children's clinics affords a shining example for other organizations that are philanthropically inclined.

The Elks association after some years of experimentation has concluded that it is best to leave the practice of medicine as well as the dispensation of medical charity in the hands of the medical profession. This is quite in line with the verities. This of course is in line with the state society's contention that all matters concerning any phase of health work should be directed by medical societies or medical men, and that laymen should no more dabble presumptuously in health work without scientific direction than in legal or ecclesiastical matters.

Conforming this statement the profession will find food for rejoicing in these excerpts from a speech on Aug. 21, 1929, by Bruce A. Campbell,



chairman welfare activities commission, Illinois Elks association:

"Early in its deliberations, your commission became convinced that any successful work that was to be done must be in complete harmony with the Illinois State Medical Society and with the local medical societies. From time to time, your commission has had personal interviews with the president and other officers of the Illinois State Medical Society and with representatives of various county societies. At all times in forming its clinical program it has had the advice, assistance and presence of medical officials. Your commission is fortunate in having as chairman of the clinic committee, Dr. W. R. Fletcher, a member of the commission and an active practicing physician. In no instance has any step been taken without the hearty approval of the properly constituted officers and committees of the Illinois State Society. Personal letters have been sent to the president of every local society acquainting him with the clinic program and asking him to present it before his society and to ask the endorsement of that body. The response has been splendid. Local societies have followed the lead of the state society and endorsed the work and joined with us. The Journal of the American Medical Association has commented favorably upon the work. In the June issue of the bulletin of the St. Clair County Medical Society, the booklet containing our program was reproduced almost in its entirety.

"Rules and regulations for the clinics have been established by the clinic committee and the staff. It is unnecessary to go into detail concerning these regulations in report. Copies of these regulations will be furnished to each local committee. There is one feature, however, that the commission wants to impress upon the lodges and that is that children will not be examined at a clinic, except when accompanied by a parent or relative and then only upon written request and consent of the family physician. The members of the medical societies have said to your commission that where the child has no family physician and is unable financially to procure one, that the members of the local medical society when applied to and satisfied as to the conditions, will furnish the requisite request and consent of the physician.

"When accompanied by the family physician, we welcome any child to our clinics. In many instances, the parents will be able to arrange and pay for the subsequent treatment. In other cases, the family, while not able to take the child to the high class orthopedic surgeon or to pay for such services, will be able, through the advice given at the clinic, to have the treatment continued under the direction of a family physician whom they can pay. It is only in cases where the family is very poor or poverty stricken that there will be any necessity for local expense by the local organization. Your commission does not consider this work a charity. It does not feel that any children who attend ought to consider that by accepting our help they are becoming objects of charity. We do not consider it so and we do not think they should consider it so. We feel that we are simply performing a duty that the order owes the public and which it is willing to perform without the recipients being considered as or being objects of charity."

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#### HISTORICAL COLLECTION OF EARLY CLINICAL THERMOMETERS AND STETHOSCOPES DESIRED

The National Tuberculosis Association wishes to complete an historical collection of early clinical thermometers and stethoscopes for a permanent exhibit to be shown at its offices in New York and later to be made part of a permanent exhibit at the Academy of Medicine.

It is hoped that those who have in their possession the earlier types of thermometers and stethoscopes will respond to appeal and donate them to this exhibit.

The Chicago Tuberculosis Institute, 360 N. Michigan Blvd., Chicago, will be glad to forward any instruments, data, etc., that doctors are willing to donate.

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#### REPORT OF EDUCATIONAL COMMITTEE

June 1-October 1, 1929

This report, covering the past four months, shows that county medical societies as well as lay organizations are making use of the services offered by the Educational and Scientific Service Committees.

20—Physicians were scheduled to give scientific papers before thirteen county medical societies of Illinois and a staff meeting at St. Fran-

cis Hospital, Indianapolis, Indiana. A crippled children's clinic was arranged for the Perry County Medical Society.

50—Health talks were given by physicians before men's service clubs, Home Bureaus, Teachers' Institutes, Graduation Exercises of Nurses, Parent Teacher Associations, Women's Clubs, and High Schools.

49—Appointments for health talks have been made for the next few weeks. These talks will include 9 on diphtheria prevention to be given in DuPage County in connection with a county wide diphtheria immunization campaign, 4 health meetings at Farmers' Institutes, and 15 senior high school assembly periods.

A series of 10 health lectures is being arranged for the South Chicago Y. M. C. A. These meetings will be open to the public and the talks will be illustrated with moving picture films. Suitable educational articles on the topics to be discussed will be used in the local newspapers.

34—Radio talks have been given by members of the Chicago Medical Society over stations WGN and WJJD. Subjects covered were Nervousness and Nervous Breakdowns, Concerning Disorders of Speech, Causes of Hayfever, Some Interesting Discoveries in the Field of Medicine, Household Accidents, Tuberculosis, Some Suggestions on Social Diseases, Summer Vacations, The Doctor and His Patients, What Do You Know About Goiter, Early Signs of Appendicitis, Importance of Prenatal Care, Truths and Untruths About Eczema, Summer Care of the Baby, Diet in Disease, Early Care of Cross Eye, Prenatal Care, Flat Feet, Prevention of Disease, The Beginnings of Cancer, Skin Diseases, Infections and Injuries of the Skin, Eating to Live, Mother's Health, Smallpox, The Menace of the Public Drinking Cup, Some Facts About the Gall Bladder, Headache, Anemia, Goiter, Correct Posture, An Aid to Vision.

1,696—Health articles were released covering the regular service the committee is giving to about one hundred newspapers in the state.

1,174—Special articles on diphtheria and smallpox were sent to all newspapers in the state.

432—News items were released to newspapers announcing the Annual Fall Meeting of the Schuyler County Medical Society at Rushville, the Tri County Medical Meeting at Kewanee,

and the Crippled Children's Clinic in Perry County.

53—Educational health articles have been written and approved by the members of the Educational Committee. The wide range of subjects covered afforded suitable articles for release during the summer. Fireworks, Mother's Vacation, Watch Out For Poison Ivy, Broken Bones, Poisonous Snakes, Fire and Burns, First Aid For Wounds, Weather and Disease, Does Your Child Get Enough Sleep, Care of the Skin, Infantile Paralysis a Seasonal Disease, Swimming, Colic, Some Observations on Blood Pressure, Couldn't Live Without Them and Die Because of Them, Think It Over, A Diphtheria Warning, Saving a Life, Married Men Live Longer, About Goiter, Breaking a Bad Habit in Children, Radium, What Are Degenerative Diseases, Protein Sensitization, Facts About Chickenpox, An Aid to Vision, Vitamin C, Is Your Weight Right, Health Hints for Vacation, The Baby's Feet, Breakfast, Don't Faint, Children's Growth, You Might Be Interested to Know, Importance of Skin Infections, Eating to Live, Facts About Bright's Disease, Many Diseases Traced to Focal Infections, How to Select Your Family Doctor, Skin Cancers, Contagious Diseases and School, Are You Worried About Your Health, Gallbladder Trouble, Your Posture, The Drinking Cup, Sore Throat, How Does Your School Measure Up, Lead Poisoning, What To Do Before the Doctor Comes, Diseases Transmitted to Man by Animals, That First Cold.

The Educational Committee has received reports from chairmen of summer round-up committees responsible for promotion the pre-school child examination which show that in many communities parents prefer to have this work done by the family physician. Comments follow:

"We feel in another year it would be better to have examinations held in the doctors' offices, where they will have more adequate means of carrying on the work."

"Our doctors and dentists were very glad to cooperate with us and they much rather have them come to their office and the mothers liked it better than taking them all to the grade school building as we did two years ago."

"The majority of children were examined in their physician's office."



"Our school had their preschool children sent to the family physician for examination."

"We had the children in our district meet at the school, and two of the school nurses and some of the mothers helped weigh and measure them. Then we had them go to their family physician and dentist for further examination, and I think that most all of them out of the twenty-two that we had have gone."

JEAN McARTHUR, Secretary.

## Correspondence

### SCHUYLER COUNTY MEDICAL SOCIETY WALKS OFF WITH THE HONORS— SETS A MARK FOR OTHER SOCIETIES TO SHOOT AT ANY COUNTY SOCIETY IN THE STATE REGARDLESS OF SIZE CAN DUPLI- CATE THIS FEAT

Monmouth, Illinois, Sept. 27, 1929.

*To The Editor:* We receive many letters from small societies throughout the state saying that on account of the size of their society it is impossible to hold meetings, and to them we again refer to the Schuyler County meeting and we believe that any society in the state regardless of size, can duplicate this feat and have a big meeting if members will work together in their arrangements, call on Miss Jean McArthur for assistance and get announcements out to all of the physicians in the surrounding counties. This office will gladly render all possible assistance and will send the names and addresses of all physicians in the surrounding counties upon request.

At any rate, the Schuyler County Medical Society, H. O. Munson, secretary, and the other seven members of the society, deserve much credit for their achievement and they surely have set a mark for other societies to "shoot at" and with their type of co-operation we believe with them that next year the meeting will be bigger and better than ever before.

Yours very cordially,

HAROLD M. CAMP, M. D.

Secretary, Illinois State Medical Society.

The following is an account of the annual meeting of the Schuyler County Medical Society:

The Schuyler County Medical Society is one

of the smallest societies in the state. There are only eight members. One year ago the society decided to hold a big annual meeting. One hundred and ten physicians attended the meeting. This year they decided to have a bigger meeting, September 26. The total registration at the meeting was one hundred ninety-one, a mark attained by but few of the medical societies of Illinois regardless of their size. The meeting held at Rushville was well planned in every way. Over four hundred invitations were sent to physicians in fifteen counties of central Illinois. The meeting opened with a very fine dinner at the Community House in Scripps Park adjoining the city of Rushville. Colonel Chas. D. Center, Councilor of the Sixth District from Quincy acted as toastmaster and chairman of the meeting. Doctor Center is a past-master in the art of entertaining and well compares with the master of ceremonies in the typical modern "revues," having at his command the choicest phrases of the English language and a voluminous supply of appropriate stories.

Dr. Herman L. Kretschmer, Professor of Urology at Rush Medical College, gave an illustrated talk on "Tuberculosis of the Kidney," instructive, interesting and authoritative. Doctor Kretschmer covered the fundamentals in a way highly interesting.

Dr. James H. Hutton of Chicago gave an illustrated talk on "The Common Endocrine Disorders," which was unusually illuminating, avoiding the usual "show cases" mentioned in the talks usually given on this subject.

Dr. Ben Baird of Galesburg led the discussion of Doctor Hutton's paper and Doctor Norris of Jacksonville discussed the paper of Doctor Kretschmer.

The third paper on the program was by the state president-elect, Doctor William D. Chapman of Silvis, on "Puerperal Care". This was an able discussion of an important subject and was of great interest to all present. The subject was selected because the Illinois State Medical Society believes that more obstetrical subjects should be discussed at society meetings, as practically every physician in the state is vitally interested in these problems. Doctor A. L. Brittin of Athens, past-president of the Illinois State Medical Society, presented an able discussion of Dr. Chapman's paper. Colonel Center intro-

duced a number of guests present at the meeting and called on Doctor Andy Hall, Director, Department of Public Health, Springfield, Illinois. Doctor Hall gave an interesting report of the work of his department and urged physicians to co-operate with him in improvement of health conditions. Doctor Hall reported statistics compiled in his department. These showed, among other things, material reduction in maternal mortality during the past year. The Schuyler County Medical Society was congratulated on the results of their efforts in promoting the meeting.

It is the intention of this small society to continue these annual meetings and make them larger and better than ever before. Miss Jean McArthur, secretary of the educational committee of the Illinois State Medical Society, was present. She had rendered much assistance to the society in advertising the meeting as well as arranging the interesting program.

#### MARK TWAIN SAYS IT PAYS TO ADVERTISE

When Mark Twain in his early days was editor of a Missouri paper a superstitious subscriber wrote to him saying that he had found a spider in his paper, and asking Mark whether that was a sign of good luck or bad. The humorist wrote him this answer and printed it in the paper:

"Old Subscriber: Finding a spider in your paper was neither good luck nor bad luck for you. The spider was merely looking over our paper to see which merchant is not advertising, so that he can go to that store, spin his web across the door and lead a life of undisturbed peace ever afterward."

#### MEDICAL CHARITY

"The practice of charity is one of the most ancient and glorious traditions of the medical profession, and only recently the Chicago Medical Society reaffirmed and published in its official transactions the ethical ideal that it is ready and willing at all times to serve the citizens of Cook County irrespective of their economic status. The profession feels, however, that only too frequently its desire to serve the public is misunderstood or taken advantage of by the unworthy. That charity is pernicious which takes from independence its proper pride and from mendicancy its proper shame. The abuse of charity leads for the physician to pauperization of the body and for the patient to the even more serious pauperization of the soul. In both cases civic pride is abolished by the personal degradation. The abuse of charity arouses the indignation of the physician because every such case prevents the extension of legitimate aid to a worthy object. This state of affairs is liable to continue, however, until society learns that the successful distribution of medical

charity is a specialization which can only be accomplished through the exercise of the principle that MEDICAL MATTERS MUST BE MANAGED BY MEDICAL MEN."—*Inaugural address of Dr. Charles B. Reed.*

#### PASTEUR DID MORE FOR THE WORLD THAN ALL THE WARRIORS WHO EVER LIVED

The average citizen believes that Lister evolved Listerine, that senna was named for Nicholas Senn and Murphy invented a patent metal button used on overalls. In fact, he is about as ignorant of the great names in medicine as the old dorky whose master told him to go back to the house and get a book on Florence Nightingale. "Yas sir, yas sir, night in jail. Ah knows! Ah knows!"

Seriously though, isn't there a place in the school and college histories for mention of those advances which have meant so much to the welfare of mankind? Pasteur did more for the world than all the warriors who ever lived. Charles Martel, another Frenchman, turned back the Moors at Tours but important as was this event to Nordic civilization, any one of Pasteur's discoveries produced an infinitely more beneficial result to all humanity. Laveran's discovery has conquered a greater menace than all the forces of Genghis Khan and Tamerlane and Carter's simple observation of the extrinsic period of yellow fever was more far reaching in its results than all the victories of Nelson. The youth of our country should know more about the decisive battles against disease and less about the inconclusive exploits of arms.—*Medical Journal and Record.*

#### FATE OF PHENYLBUTYRIC ACID IN DEPANCREATIZED DOGS

J. E. Sweet and Armand J. Quick (*Journal of Biological Chemistry*, 80:527, December, 1928)

The depancreatized dog retains the power to oxidize phenylbutyric acid to phenylacetic acid and to conjugate the latter with glycine and with glycuronic acid. Because of the relatively close relationship between the phenyl aliphatic acids and the normal fatty acids, both as to their chemical structure and their physiological behavior these findings suggest that the diabetic organism probably can still oxidize completely a small amount of butyric acid.

The theory is proposed that in the metabolism of fatty acids, butyric acid or one of its metabolic derivatives is chemically combined with a carbohydrate group similar in type to the conjugation of benzoic acid with glycuronic acid.

#### TREATMENT OF MIGRAINE

Sedillot (*Progrès méd.* 53:2215, Dec. 29, 1928)

The author presents a patient who was cured by means of disintoxicating treatment associated with pituitary organotherapy. He believes that the crises of migraine are ordinarily connected with a transient congestive attack of the pituitary.



## Original Articles

### BACKACHE, ROENTGENOLOGICALLY CONSIDERED\*

MAXIMILIAN JOHN HUBENY, M. D.

CHICAGO

Backache, like fever, headache and vomiting, is only a symptom and may require considerable investigation before its cause is ascertained. Unfortunately, there are few pathognomonic signs in medicine and other symptoms are present to make the problem more complex. While this paper will deal essentially with low back pain, some casual mention will be made of the cervical and upper dorsal vertebra.

One is likely to be dominated by his specialty; the gynecologist believes most backaches due to pelvic conditions, the urologist immediately thinks of kidney disease, the orthopedist attributes backache to strains, osteal conditions and malformations of the spine while the internist is apt to consider infectious processes as causative factors.

One should have a workable outline in mind when a case comes in for roentgen examination, even though the case has been reasonably sifted as to localization, it is up to the roentgenologist to think of such possibilities as to substantiate the clinical diagnosis or occasionally pick-up some unsuspected associated symptom or even negate the tentative diagnosis.

For instance, during a fluoroscopic examination of the gastro-intestinal tract a dilated aortic arch is observed, immediately the roentgenologist thinks of syphilis; in occasional instances this averts a laparotomy because the patient really exhibited signs of tabetic crises; or close observation of a patient sent in for spine examination might indicate a possible sinus disease, which often accounts for an infectious spondylitis.

To give the ultimate in assistance, the roentgenologist must think in terms of general diagnostic medicine.

A broad classification quite inclusive would be as follows: First, infections; second, trauma; third, new growths; fourth, anomalies; fifth, senility; sixth, static or postural.

Numerous interesting reflex conditions may

produce backache in which an x-ray examination is helpful. Among them are chronic appendicitis, gall-stones or gall-bladder infections, spastic constipation, renal calculus, retroperitoneal calcified glands, abdominal ptosis, mucous colitis, carcinoma of the rectum, pregnancy, uterine fibroid, ovarian cyst, prostatic calculi and renal ptosis.

There are so many variations that are normal that great caution is necessary lest one make a diagnosis of pathology. Dr. Bertram C. Cushway of Chicago read a very exhaustive treatise on this before this section last year and at the annual meeting of the Radiological Society of North America in 1928.

He especially emphasized the value of a complete examination of the spinal column prior to employment in railroad service to note its exact condition, so as to avoid undue litigation as regards compensation following an injury.

Roentgenology has a very distinct relation to forensic medicine now, because of the responsibility of the employer to his employee. Unfortunately, a new vicious by-product has resulted in which collusion among the so-called patient, lawyer and doctor exists, often resulting in a handsome award; it is needless to state that the utmost vigilance and militant action are necessary to curb this growing practice.

It is also the duty of the roentgenologist to exercise caution so that unnecessary operative interference is avoided. The poor coccyx has been blamed for many things just because it had a tilt; in the recent past, sacralized transverse processes of the fifth lumbar vertebra were removed because they looked suspicious; the same was true with cervical ribs.

The writer was strongly impressed by an incident which happened many years ago in which a child had a wry neck; muscular correction was advised, however, the infant was examined by a cautious surgeon and x-ray examination of the cervical spine was advised to rule out a possible Pott's disease; the findings showed the presence of rudimentary mal-developed vertebral bodies which definitely accounted for the unusual carrying angle of the head; naturally, no operation was performed. Bipartite transverse processes of the first lumbar vertebra are often misconstrued as fracture.

Occasionally the question to be decided is how

\*Read before the Section on Radiology, Illinois State Medical Society, Peoria, May 22, 1929.

old is a lesion? Of course, bone alteration, other than fracture or dislocation, is dependent, in a manner, on the time factor and here is where the experienced roentgenologist can speak with reasonable authority.

He must be able to recognize normal repair and disease processes. He must consider pressure symptoms, due to neighborhood involvement such as posterior mediastinal tumors, aneurysms; he must think of local conditions and ultimately be in a position to state whether the spine is or is not pathologic.

Hypertrophic changes are often significant and may be painful; however, they occur so often after the fourth decade without any associated symptoms that we consider the latter as senile changes.

Time will not permit a comprehensive dissertation, so a few unusual case reports will be cited illustrative of certain valuable points.

Case 1. Radiographic findings of lumbar region showed a scoliosis, due essentially to lack of symmetrical development of the fourth lumbar body, the right half smaller than the left half in both the transverse and vertical dimensions; the transverse processes are asymmetrical, there is an osseous overgrowth on the right side resembling a crow's beak which is about three-fourths inches long. Intense backache was present, supposedly due to preternatural mobility attributed to poorly developed facets, and hypertrophic syndylitis. Only thing in history of any value was typhoid fever thirty-four years ago; at present, intense backache with alternate periods of constipation and diarrhea and occasional irritability of urinary bladder. Tibial transplant to immobilize the lumbo-sacral region was suggested but refused. Later a gastro-intestinal examination revealed a pathologic appendix which upon operation was involved in extensive adhesions to the bladder, cecum, terminal ileum and the peritoneum over the psoas magnus region. Removal of the appendix and releasing adhesions gave complete relief from the intense backache.

Case 2. Male, adult. Fell backward alighting on head, unconscious for four days. Immediate x-ray examination of the head revealed no fracture, ambulatory convalescence occurred in three weeks. Because the head was carried forward in an exaggerated position an x-ray examination of the cervical vertebra was made and revealed an anterior dislocation at the lower border of the fifth vertebra. Patient complains of bilateral shoulder pains and pains at root of neck. No reduction was attempted because function of the patient was reasonably good.

Case 3. Male, aged 28, no relevant family history; bilateral lumbo-sacral ache, more especially near right sacro-iliac joint. Films taken of pelvis March 12, 1929, were negative. There was a slight palpable mass

on posterior surface of right ilium. Film taken April 24, 1929, showed an area of decalcification; tentative diagnosis, sarcoma. To date no pathologic checkup.

Case 4. Predominant symptom backache. Some cough. Chest revealed old tubercular involvement. Lumbar area showed a negative spine; there was a large dumb-bell shaped calcific deposit to the left of the second lumbar body directly over the kidney outline. Fortunately it showed a double shadow due to respiration which was inadequately suspended; however, the kidney was well outlined. A second film was taken on which two exposures were made, one after deep inspiration and one after deep expiration; the kidney outline was again clean cut, but the calcified body showed considerable transit. A diagnosis of an old tuberculous calcified retroperitoneal gland appears tenable.

Case 5. Female, aged 29. Backache since a fall seven months ago, localized, particularly over the area of articulation of the fifth left transverse process which is sacralized; this shows distinct hypertrophic changes.

Usually this is a somewhat rigid joint, apparently the injury produced a strain on the ligaments and the subsequent arthritic changes.

Case 6. Male, aged 56. Two years ago fell backwards, sustained severe injuries to the cervical spine. Considerable ache of the neck and upper dorsal area and both shoulders. Examination at the time of injury showed a fracture of the body of the second cervical vertebra. Films taken recently showed an almost complete union of the fragments with some hypertrophic changes of the body of the third cervical vertebra. In addition the adjoining edges of the fourth and fifth cervical bodies show marked hypertrophic changes, often accentuated by a severe ligamentous trauma. To avoid slip-ups, both shoulder joints were taken, the right showed an aberrant articulation between the clavicle and the coracoid process, while the left showed some proliferative osteitis of the clavicle adjoining the coracoid process and at the lower margin of the glenoid cavity, indicative of ligamentous and capsular trauma.

Case 7. Male, aged 72. Pendulous abdomen, with palpable tumor, backache, frequency of urination, ammoniacal urine, hypertrophied prostate. A gastro-intestinal examination revealed the small bowel lifted out of the true pelvis and arranged in a circular manner; the diagnosis was obscure; however, tentatively, a large urinary bladder was suspicioned, catheterization withdrew 29 ounces of residual urine whereupon the tumor disappeared. Removal of the prostate gave considerable relief.

Case 8. Male, aged 51. Hard protruding abdomen, backache, urinary findings similar to case 7. Soft catheters could not be passed; after considerable trial a metallic catheter was inserted with voiding of large amount of urine and total disappearance of abdominal tumor. Operation revealed presence of an anomalous membrane such as described by Lowsley.



Case 9. Female, aged 51. Low backache for many months; some gastro-intestinal symptoms. A gastro-intestinal examination revealed a peculiar arrangement of the terminal ileum suggestive of tumor. Vaginal examination found an unsuspected fibroid.

Case 10. Female, aged 39. Very fat; abdominal and vaginal palpation unsatisfactory, backache was constant and severe. X-ray examination revealed a large hydrostatic tumor; a diagnosis of ovarian cyst was made and verified by operation.

Case 11. Male, aged 47. Backache, bladder irritability, gonorrheal history negative. Examination of prostate revealed 54 countable calculi, most of which were expressed by digital massage. Considerable relief was experienced.

About one-tenth of our patients who are studied for chronic disease complain of backache, and many times it is our lethargy or looseness of methods of investigation that the cause of backache is often undisclosed. We think that it is of no great moment and therefore, do not investigate seriously; however, after headache, it is the most frequently distressing symptom man is afflicted with.

#### DISCUSSION

Dr. B. C. Cushway, Chicago: Our work in the examination of the spine, is fully as important as radiological work in any other part of the body. We are frequently called upon to differentiate between a compression fracture of the vertebral bodies and changes due to anatomical variations in development. Dr. Hubeny has discussed and shown slides covering many of the anatomical variations associated with the spine and some other portions of the body that can be shown radiologically. I feel that Dr. Hubeny's paper brings out the importance of the recognition of the anatomical variations observed in the spine and other portions of the body. I feel that this subject is a very important one and I am very glad indeed to have the opportunity of discussing Dr. Hubeny's paper.

Dr. Trostler brings us a very interesting condition in his paper. This report calling attention to the results of fractures of the transverse process of the vertebrae, brings up an unusual condition. The fact that symptoms following these fractures did not develop until some little time after the injury is important and interesting. The fact that the symptoms simulated pathology in the urinary tract is also interesting. It will be necessary for us to consider the possibility of this condition in our examination of the urinary tract. I will now show a few slides showing changes associated with the vertebrae and pelvis, due to anatomical variations in development. These cases came under my observation during a study of one thousand spine cases, studied with a view of bringing out the frequency of anatomical changes in development associated with the spine.

In order that we may recognize changes in the spine we must first have a knowledge of the normal. With

the knowledge of the normal we must then take into consideration the anatomical variations which are normal with certain individuals. The anatomical variations in development are usually symptomless.

I reported before the section on Radiology last year a study of 931 cases, where forty-five per cent. of the anatomical variations were found in symptomless individuals. These men were examined before entering service for the Belt Railway Co., Chicago. They all passed rigid physical examination which showed no indication of any pathology associated with the spine. They had no symptoms and denied ever having had an injury. The following slides will demonstrate some of the conditions observed in this series of cases.

Dr. Cushway showed slides to illustrate cases.

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STATE MEDICINE MEANS REGIMENTATION AND NULLITY. THE DANGEROUS TENDENCY OF LEGALIZED AUTHORITY TO USURP POWER IN OTHER PURSUITS IS NOW UNFORTUNATELY EVIDENT IN MEDICINE. THE CONSEQUENCES HAVE BEEN BAD ELSEWHERE. THEY WILL BE DISASTROUS IN MEDICINE\*

CHARLES B. REED, M. D.

President of The Chicago Medical Society

CHICAGO

The change from president-elect to president is a short shift but a definite one. A man moves from the forensic field of business and policy in the council to the more composed arena of academic discussion. He passes also from association with the few, to the aggregation of many; from a relatively fixed attendance, to a constantly varying group of faces.

The transition is brief, but the outlook is unmistakably altered. The difference is emphasized by one's companions, and by the ceremony of installation. The formality has its uses, for, while one may have no doubt about his relationship to his fellows, it gives a certain comfort to know that an eminence however undeserved is legally established and popularly accepted!

The emotional response to the change is curiously mixed. I have a deep sense of loss in leaving the council. I have also an abiding appreciation of the honor which your generosity is conferring upon me tonight, an appreciation which is equalled only by the ambition that the

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\*Inaugural address before Chicago Medical Society, June, 1929.

office may be filled acceptably and represented worthily.

It has been suggested that something be said tonight about plans for next year. I hesitate to approach, much less to lift, the veil which covers the face of futurity, for that veil is woven by the hand of a merciful Providence! Fidelity to the present and its problems is the best safeguard for the morrow. With greater profit, therefore, we can discuss a few of the questions which agitate our membership today. In this way we can more profitably forecast the future. At the same time a mutual understanding can be readily established. You will learn the attitude which the speaker holds to these questions, and he in turn will discover whether or not he properly represents you.

Let us begin, therefore, with some domestic details and clear up, first of all a few points relating to our official Bulletin. There seems to be an impression in certain quarters that the Bulletin is not profitably conducted, that the income received is not commensurate with the amount of advertising carried. This feeling has no basis in fact. According to the contract, the publisher assumes all costs, responsibility, and business management of the publication and pays therefor to the Society on all advertising a definite rate which increases yearly by 1 per cent. It is an advantageous contract, for it brings in approximately \$200 a month where formerly the journal was issued at a loss.

It is intended, under the special attention of the executive secretary, to make the Bulletin larger and more attractive hereafter. The plan calls for a considerable change. Instead of a dry abstract of Society proceedings which is commonly glanced at and thrown aside, new departments will be opened up which contain interesting items relating to medical matters in general and our local affairs in particular.

Practitioners of medicine are only human and they will not waste their time on irksome reading. They have in their daily lives tragedies and comedies more enthralling than fiction and whatever they pick up for perusal must definitely hold their attention. On the other hand, the doctor is deeply concerned with what goes on around him and so, in addition to the programs and abstracts, the pages will contain news notes and personals as well as editorials which com-

ment on current medical activities in other parts of the country.

The Legislative Committee also promises to enlarge its scope, and make medical publicity of an ethical character a strong feature of the year's work. With the Department of Health functioning in close harmony with our organization; with four great medical schools and numerous hospitals in our midst, there should be no lack of material to enlist our interest.

Medical economics is also a subject of vital importance to the profession at this time, and the Program Committee hopes to arrange for special lectures on this subject by eminent educators. In addition, Dr. Frederickson's committee will spread the gospel of economics to all hospitals and medical schools.

The items thus far mentioned are only our family affairs, things which are largely under our own control but we come now to outside relations which are more difficult to dispose of.

*State Medicine.* As we look about in this money-mad civilization we discover capitalism and trades unions, two powerful industrial forces struggling for mastery or accommodation, while between the two is government, striving to dominate both. Capitalism at present is a menace to medicine only through the objectionable tendencies and unethical operation of some of its foundations. The question of trades unionism I shall dismiss by pointing out that medicine is a scientific profession, and not a branch of mechanics or industry. The menace and ineptitudes of government interference I must discuss more particularly.

State medicine means regimentation and nullity. Preventive medicine and sanitation are admittedly functions of government but there are limits beyond which the state may not proceed. The dangerous tendency of legalized authority to usurp power in other pursuits is now unfortunately evident in medicine. The consequences have been bad elsewhere—they will be disastrous in medicine.

State medicine may be defined as the assumption by the commonwealth of those duties in connection with the prevention, care or alleviation of disease which are usually performed by private individuals who have been duly qualified and registered as physicians.

State medicine means socialized medicine



wherein the invalid has no voice in the selection of his physician nor the physician in the selection of his patient. In government regulation, as we in this country understand its meaning, the only spirit which can be justified is that of fairness and equal advantage. In regulating an industry or a profession there must be left a field of opportunity which will attract the same energy, ambition and initiative as do other enterprises, or else the public will suffer as well as the individual.

*The state cannot manage without commanding, and it will happen, therefore, where the state assumes authority that our profession will fall under the thumb of the politician.* The dictation to the doctor by lay boards in certain medical institutions is bad enough, but such dictation becomes insufferable when exercised by self-seeking ward heelers and ruthless political organizations.

Furthermore, where professional services, legal or medical, are rendered in terms of cost instead of value, the type of such service soon becomes meager, inadequate and inefficient. The physician of courage, initiative, character and ability abandons the profession and is promptly replaced by the weakling and the time server.

We must look abroad, fortunately, for the horrible example, and Dr. Ochsner tells us that in Germany state control has destroyed the splendid sweep of medical progress which was the envy of the world; it has ruined the profession, as in truth it must, and foisted upon the people the worst methods, kinds and degrees of medical practice that have ever been suffered by a civilized population.

Society demands of its physicians a certain standard of living and in order that the kind of service which the community requires can be rendered satisfactorily, society must enable its medical men to maintain their economic independence.

When the state becomes completely paternalistic and provides free medical service we shall expect to see the process extended until the state doles out bread and circuses, meat and movies to such a parasitic and degenerate populace as preceded and produced the fall of Rome.

That the movement is under way in America, and that its vicious trend is similar is shown by the glaring evils of the Sheppard-Towner Bill in

Congress. The iniquities of this bill have been splendidly exposed and emphasized by Dr. Whalen in our own state medical journal. But it remains the duty of physicians to keep watch and ward and to waken the public to these attempts to undermine national ideals. America and all its wonderful possibilities will perish when a majority of the people are no longer ready and eager to make a valiant fight for the preservation of their manhood rights.

*Our most pressing problem today in medicine is to protect professional freedom against the encroachments of socialism and the state.* To those who scoff at the danger of state medicine or regard it as a vain delusion which can never materialize, it is sufficient to say that state medicine in some form already exists and operates in every state in the Union!

*Medical Freedom.* Before the war one could declare with confidence that the day would never come when a *free-born American citizen would be deprived of any voice in choosing his physician*, but the times are in flux. Forms, fashions, ideas and beliefs are changing day by day. Already the state has decreed what the doctor shall prescribe, what the patient shall drink. It has deprived our people of the right to select their liquid in-take because a certain contingent have stronger desires or weaker inhibitions or a different taste than the others. *Can there be a law concerning taste? Can we cure disease by legal enactments? Will the state totally forbid the use of wheat because it injures diabetics?* It may well come to pass that such a restriction may fall upon us. *It is not impossible that a zealous group may spring up and under the urge of an undisciplined altruism demand the abolition of sugar or some other hygienic heresy and try to enforce it by legislation.*

*The freedom and liberty our forefathers died to obtain have become the football of fanatics. It is unfortunate that the ministers of a kindly Creator and a compassionate Christ should lead in the persecution of their brother who errs through infirmity, and of the culprit who offends without sin. Professors of religion should be the first in benignity and the first to condone, yet on all sides we see ministers of the gospel, vicars and bishops, in the service of a merciful God, who have beaten their creeds into Volstead laws and their crosses into pruning hooks for the mutilation of mankind.*

*Medical Economics.* Another danger that hovers over us is the corporate practice of medicine. The unfairness and the inefficiency of such procedures have been presented to us month by month and year by year in the history and exploitation of the Public Health Institute—at present a corporation practicing medicine for mass production and for profit in the state of Illinois.

The ethics of the medical profession declare for equal opportunity and equity of conduct between doctor and patient and between members of our fraternity; but corporations are not restrained by any canon or code of practice from soliciting business. Neither are they forbidden to pay commissions for having business referred to them.

The corporation employe is bound by the economics of business—his relation to his employer and to the customer is conditioned entirely by these rules. The Economics of a profession of science are necessarily different because a different end is sought. Each is pertinent and expedient for its own purpose. It is foolish, and an inevitable cause of conflict to try to apply the economics of one field to another for which it is unsuited.

The practice of medicine is not a business but a personal right restricted to persons whose good character and special qualifications have been ascertained and certified to after a long course of study and by license through a state board appointed for this duty. The right to practice medicine is a privilege earned by the individual and granted by the state for merit, and since these conditions cannot be met by a corporation, it is obvious that a corporation cannot legally and should not morally engage in medical practice. Furthermore, to hire doctors to carry out provisions of practice which corporations cannot legally or personally perform is a mere evasion which the state should not tolerate.

Even though such medical employe is well taught and reasonably competent, he has lost the essential relation which should exist between the professional man and his patient. *He has necessarily submerged his professional identity in an organization primarily commercial in character; an organization devoted to mass production which has neither a conscience to guide, a body to kick nor a soul to save.*

*Medical Charity.* We now approach with trepidation the subject of charity. It may seem immodest to speak of this even among ourselves, for "charity vaunteth not itself," but a decent sense of honor requires us to take notice of the accusations of selfishness, avarice and rapacity which have been hurled against the medical profession. It is not improbable also that "supermodesty promotes indifference where appreciation should be shown."

The charge has been made, for example, that the Chicago Medical Society disciplined a wealthy member because his untiring efforts to reduce the high cost of illness were unwelcome and obnoxious to his fellows. It is well known that the member in question was repeatedly warned during seven years that his flagrant violations of medical faith would bring him before the bar of the Society. These warnings were flouted. The affair came to the issue. It was a responsibility belonging solely to the medical profession, which stands on the result with a free conscience before all the world. The high or low cost of illness was no part of the agitation. The charge was brought in by interested parties as a smoke screen to befog the facts and make the amputation of the defendant as painless as possible.

The attitude of the medical profession toward the indigent sick is too well established and the record of unselfish service too clear, to be attacked with justice or fairness. No part of society is so deeply concerned as the doctors in trying to make illness less expensive. In a recent inquiry among the principal hospitals doing free work among needy patients we received sixteen replies and from these we discovered that last year 405,000 cases of illness, or one-eighth of our population, were cared for without charge. It is not improbable that another 100,000 could be found in other institutions. The Illinois State Medical Journal reports that medical and surgical treatments amounting to \$18,000,000 were donated to the poor of Chicago by the medical profession. How much more was given in low cost service to others in reduced circumstances can only be conjectured but a conservative estimate would put it at several million dollars. All of this openly avowed charity service given to one in every eight of our citizens—as well as the thousands



uncounted—was given in the spirit of his profession by the AVERAGE PRACTITIONER at great sacrifice of energy, time and money but so unobtrusively that the agency was not considered. If this expense were added to the present tax burdens of the community the load would be considered very quickly.

These doctors were not paid by the hospitals for their services, nor by the patient. Is this selfishness, is it avarice? Is such work a sign of indifference to civic duties? Does any other group of citizens do as much for humanity? Even now, in spite of the alleged "greed and avarice" of the profession, doctors all over the country are studying intensively the economic problems of illness in the hope of finding a way to reduce the expense, wherein their own share is so little, and reduce that little to its lowest terms.

A part of the difficulty may lie in the various organized charities themselves, which at times seem to be conducted on the principle that that organization is most successful which has the largest clientele. Certain institutions, certain charitable associations vie with one another for the capture of likely prospects which will increase their numerical advantage or justify their somewhat questionable existence.

This principle is fallacious. We could as readily expect the prisons and asylums of the state to compete with one another for the acquisition of the highest number of inmates. It would be more equitable to use a wise discrimination in the exercise of charity. A worthy individual is entitled to adequate aid until he is competent to carry on by himself, then support should be withdrawn lest a chronic dependency be established like the dole system of Great Britain. Charity becomes a burden of injustice when a mendicant class is developed which *can* pay but will not. Something is seriously wrong with America when the richest country in the world has the largest number of free clinic applicants per unit of the population—as well as criminals. Many remedies have been suggested to correct this curious development in social pathology. One of the most promising has been formulated by Dr. Fowler of this Society—as a grouping of clinics and hospitals on a neighborhood basis, with an economically graduated scale of fees. Undoubtedly the condition requires specific

treatment, and it may well be that Fowler's Solution will serve to relieve, if not to cure.

The practice of charity is one of the most ancient and glorious traditions of the medical profession and only recently the Chicago Medical Society reaffirmed, and published in its official transactions, the ethical ideal that it is ready and willing at all times to serve the citizens of Cook County irrespective of their economic status. The profession feels, however, that only too frequently its desire to serve the public is misunderstood or taken advantage of by the unworthy. That charity is pernicious which takes from independence its proper pride and from mendicity its proper shame. The abuse of charity leads for the physician to pauperization of the body and for the patient to the even more serious pauperization of the soul. In both cases civic pride is abolished by the personal degradation. The abuse of charity arouses the indignation of the physician because every such case prevents the extension of legitimate aid to a worthy object. This state of affairs is liable to continue, however, until society learns that the successful distribution of medical charity is a specialization which can only be accomplished through the exercise of the principle that MEDICAL MATTERS MUST BE MANAGED BY MEDICAL MEN. When this maxim is generally accepted, a new regime will be instituted wherein the medical service will be adequate and efficient, while the return to the physician, "whether directly financial or more indirectly in the form of prestige, will be such as to guarantee the freedom and independence which are due the medical profession."

State medicine, the pay clinic, the corporate practice of medicine and certain abuses among the one hundred and eighty recognized charity organizations of the city, we believe to be wrong in principle, and we have the right and the purpose to oppose these movements—not through selfish or mercenary motives, as charged, but in the interest of the community and the rights of the individual. The profession exists for the people and not the people for the profession, but if the public is to be saved from exploitation by charlatans, smooth tongued swindlers, quacks and mountebanks, it must be done through an energetic, aggressive and united medical profession.

*Medical Organization.* "Physicians as a rule," says Osler, "have less appreciation of the value of organization than the members of other professions." Note the word "professions." Medicine is a profession as distinguished from a trade. In the latter there is always a way to fix values by the pound, the yard, the number or the hours of labor. The service of our profession can never be weighed in the balance or metered by numbers or mileage. But this professional attitude can only be maintained by organization, an organization which will unite and solidify the gregarious and the individualistic, the rich and the less prosperous, the active and the indifferent, in a common purpose to uphold and advance the high aims and traditions of our fraternity.

Our scientific discoveries and development has stored up for us a vast fund of knowledge. This fund is not ours to keep and conceal for our private uses, but it must be imparted to mankind for its welfare and betterment. The promotion and dissemination of medical knowledge is one of our most important functions. If done judiciously, we will retain the pre-eminence which so rightfully belongs to the profession. It is one of our Society's greatest opportunities.

Organization of some sort is essential to progress in industry, in education and science. Medical organization must lay emphasis on medical ethics. It has put the seal of approval on certain principles which in essence are formulated by the Golden Rule. The true doctor is not in any sense in competition with his fellows, but with the average standards of medical qualifications in his community. His work is either above or below that standard, and medical contacts should serve to raise the average of the individual.

The desire to practice better medicine is stimulated by these personal contacts; by friendly discussions rather than competitions. Organization of this character has brought higher standards of medical practice to this country than exist anywhere else in the world. The public has been educated to expect and demand the best that science can offer, and our doctors are better equipped and more efficient for the fulfillment of this demand. These high standards must and shall be maintained through the unity of the profession. Without this unity all standards fail.

At no time has thorough organization and the

loyalty of the membership been more necessary and significant than today. The ignorant, the well intentioned, the self-seeking, the vicious, and the weakly sentimental surround and encroach upon our profession, as well as others, until the most constant and cohesive vigilance is required to avert destruction. We live in a period of transition wherein such manifestations are inevitable, a sort of post-war reaction unavoidable after physical and moral upheaval. We are living, too, in an era of conflict of economic theories, where the method of argument is assertion and propaganda rather than reasoning and proof. Science, in other fields than ours, is enlarging the span and scope of human life. These conditions must be taken into account as we shape our course.

To the conscientious and aspiring practitioner the science of medicine is the chief goddess in his pantheon. At her feet he pours out his professional libations in the best blood of his body. In spite of ingratitude, hardships and hostility he worships his goddess and maintains his high professionalism with the zeal and fortitude of a mystic. For does not the Apostle report that "man shall not live by bread alone"? Alas, for the idealist! His aim is high but now comes the man who functions only on the economic plane. "Have you forgotten," this materialist inquires, "that bread is the staff of life? Is not this also of the prophets?" The slogan appeals to many and gives pause to the thoughtful, for reason compels us to admit that whatsoever goddess we worship yet without a modicum of the staff of life scientific medicine must surely perish.

Progress lies in the alertness, enlightenment, and courage of our organization. Security rests in the compactness of our confederation, and in the unswerving faith and devotion of our members. The strength of the one is in the united many, and the strength of the many is the strength of the one. If we are satisfied that our policy is right let us uphold it with bodies of triple brass. Division is often a more disastrous weakness than error.

The Chicago Medical Society is the highest form of the associative urge or *nisus*. It is a voluntary group and the loyalty of its membership is freely given since every member has full power to accept or reject that fealty. In a large



city, weakness results from breaking up into cliques and coteries, the interests of which take precedence over others of a wider and more public character. Naturally among the 4,300 doctors who compose this Society there is great diversity of character. This results in segregations of greater or less extent, according to disposition and temperament. To employ a familiar analogy—we have erythrocytes and leucocytes, the most significant elements of the blood to feed our vital structure, though as sometimes happens the association is not always harmonious. This, however, is not a misfortune. From conflict comes thought, from argument comes truth. Discussion and argument are the proper signs of health in human association and there is no remission of mental sin and error without baptism in the rioting red blood which strong differences of opinion evoke.

The leucocytes, of course, present the usual physiological distinctions. Certain cells are reluctant and somewhat unsocial. They cluster about the sides of the main stream, apathetic and indifferent to the pulsing life which, in their devotion to personal aims, they have excluded from consciousness. They are blood of our blood but they do not swim with the current. Possibly we may call them lymphocytes. They have divorced themselves from intimate contact with economic and professional problems. In this group languor prevails over zeal and sluggishness over passion, yet we need their presence and their strength and trust some powerful alchemy will restore their primitive metabolism and function to the vital stream.

We have also the polymorphonuclears who go about like roaring lions seeking whom they may devour and still another segregation which is wholly discontented and unhappy. This cluster of cells is convinced that the Society does not act wisely nor vigorously. It would prefer to correct all irritations by violent means. Naturally the men of this mind seek the company of one another for exchange of sympathy and commiseration in their kindred pessimisms—they form a congestive focus.

In the Good Book from which so many striking analogies are drawn, it says (Sam. I, 22): "David therefore departed thence and escaped to the cave Adullam . . . and everyone that was in distress and everyone that was in

debt and everyone that was discontented gathered themselves unto him and he became captain over them and there were with him about 400 men."

You will remember that the Adullamites grew and prospered from fishing in muddy waters until David became King of Israel but the movement acquired strength and influence *only* when the discontent of the individual could be translated into discontent of the whole by the growing insanity of Saul. Now the innate loyalty and the sincere enthusiasm of the Adullamites is a valuable asset to this Society. We need them. They are hot blooded and feel their injuries keenly and quickly. They brood over their discomfitures and hatch out remedies of great potency—too potent frequently for the safety of the Society. Still they are alive and vital, while the lymphocytes are content to bask on the banks of the stream. The lymphocytes feel secure in their own structure and forget, apparently, that they derive their nourishment from a common plasma to which they owe a congenital if not an economic allegiance.

Much of the irritation in life comes from the consciousness of an ability which is unexercised and unbreathed. Much of the indifference is assumed. Happy is the man who is born into the world when the season and the opportunity are propitious for his talent. Happy indeed is that man, for the event is rare. The social stream moves along in wave upon wave of evolution. We have a sense of strangeness and discomfort. We are out of touch with our environment. Is it the fault of society or do we lack the power of adjustment? It is an individual problem.

In our own organization the question can be put to the test. By self-analysis a man can determine whether a projected change is beneficial for himself in particular or for the profession at large. If the unrest and discontent are widespread, a fault is obvious and the remedy lies at hand. The council is the representative body of the Society and its membership can be replaced any year by others who are immediately responsive to the trend of the current which bears us upon its bosom. The machinery is set in the most approved Jeffersonian fashion and requires only the activating touch. Above all things at this time we need a confident and criti-

cal intelligence, keenly aware of the new economic forces around us and prepared to deal with them courageously and progressively.

#### CONCLUSION

In this connection and in conclusion I hope I may be permitted to offer a personal tribute. For a year I have studiously attended the meetings of the Council. This body has occasionally been criticised for timidity, but the impression was produced by what in reality was a far-sighted prudence. It has been censured for slowness, which was not sloth but deliberation. It has been accused of indifference to the pangs of the profession, but no conscience could be more sensitive, no hand readier to act when the promising path of relief was discovered. Having passed out of this body to my great regret, I can be regarded as beyond the fear of reprisal and free from the hope of reward when I state that I have never before seen a group of men so assiduous in devotion to their duties, so earnest in deliberation, so conscientious in execution and so free from all petty feeling and delusive motives, save one, which swerve the judgment. That one, to their honor be it said, is mercy—the human quality of which is not strained or restricted. I beseech you, therefore, to have faith in your Council and hold up its hands with your confidence and your applause. It is your strong bulwark against adversity.

#### PREVENTION AND TREATMENT OF MEASLES\*

ARCHIBALD HOYNE, M. D.

CHICAGO

One of the outstanding problems confronting public health authorities today is a satisfactory method for the prevention of measles. This infection has been practically a thorn in the side of every community that has been called upon to combat its fiery spread when an epidemic begins.

During the first four months of the present year there were reported in Chicago 8,385 cases of measles, and among that number 79 deaths were directly attributed to the disease. But it may be assumed that far more actually succumbed some time following the acute attack,

though the cause of death was assigned to another factor.

Isolation or quarantine of cases, though customarily required, is of little actual value in controlling measles. Moreover, there are certain disadvantages in such a procedure, for the family will often delay in calling a physician because of the dread of quarantine. Thus, many times the patient does not receive the early medical attention which should be given. Furthermore, much of the expense entailed in placarding cases is utterly without justification, based on the results obtained. On the other hand, isolating and placarding of measles contacts who are susceptible may accomplish good, for it is these who are the source of our gravest concern. The focus of danger in contracting measles is not so much from the erupted patient as it is from the patient in the pre-eruptive period before a diagnosis has been made. This fact explains, to a large extent, the facility with which an epidemic develops.

For the purpose of establishing an immunity to measles, various plans and efforts have been put forth. As early as 1915, Herrman<sup>1</sup> devised a method for producing an active immunity by swabbing the noses or throats of infants who possessed no history of measles with the secretions of measles patients. For the most part, the patients seem to have been of an age, under four months, at which they would not ordinarily be susceptible to measles. However, regardless of the success of such a procedure, the method is one that would not be practicable for general use.

In 1917 Tunnicliff<sup>2</sup> described a green producing diplococcus which she isolated from measles patients. This organism may be the causative factor in the disease. In 1918 Nicolle and Conseil<sup>3</sup> reported on the use of convalescent measles serum for the protection of susceptibles. In 1923 Rietschel<sup>4</sup> suggested the immunization of susceptibles by means of the injunction of serum obtained from the blood of adults who gave a past history of measles. Caronia,<sup>5</sup> Degkwitz,<sup>6</sup> and also Ferry and Fisher<sup>7</sup> have reported on various methods for immunization.

Based on many years of research and experimentation, Tunnicliff,<sup>8</sup> in 1925, undertook to immunize goats against measles by means of inoculation with her green producing diplococcus.

\*Read before Section on Public Health and Hygiene at Meeting of Illinois State Medical Society, Peoria, May 21, 1929.



She thus developed an immune goat serum to use for passive immunization of human beings. During the past three years reports on the use of this serum have been made by Tunncliff and Hoyne,<sup>9</sup> Hoyne and Gasul,<sup>10</sup> Peterman,<sup>11</sup> Halpern<sup>12</sup> Hoyne and Peacock,<sup>13</sup> and several others. According to the reports made, the success of this serum seems to have been demonstrated. Last month at the Children's Memorial Hospital, 35 measles contacts were each given seven c.c. of Tunncliff's anti-measles diplococcus goat serum within two days of exposure and but one case of measles developed in that group. In this single instance the measles attack was extremely mild.

In considering the use of anti-measles diplococcus goat serum, it should be borne in mind that the protection afforded is apparently of rather short duration, probably not exceeding a period of four weeks, as a rule. Therefore, the chief value of this serum is in hospitals or institutions where it is desired to prevent an epidemic of measles among a class of children who are already ill and in no condition to withstand an added infection. In this connection it may be stated that no serious results have been encountered in the administration of Tunncliff's goat serum. In some instances, however, serum reactions have occurred, and in one group of 39 patients, urticaria developed in 13 per cent. of those receiving serum.

For the information of any one who has used Tunncliff's immune goat serum, but has not been favorably impressed with its protective value, it may be mentioned that Gunn<sup>14</sup> has recently reported that this serum is the only one among several offered for immunizing purposes which possesses any antibody. Unfavorable conclusions in regard to securing protection by means of the Tunncliff serum is frequently due to error in estimating the number of days that the receptor was exposed to measles before the serum was administered. In this relationship, it should be noted that the first day of the measles rash is not the first day of the disease, but is ordinarily at least the fourth day of the disease. Therefore, when two or more children have been in constant contact for more than a week and then one breaks out with measles, and the following day serum is injected, the receptors have been exposed to measles for five days

and not two days. Consequently, protection may not be expected. But there is the possibility that even if protection did not result modification may ensue.

It is to be hoped that eventually a vaccine may be developed which will actively immunize children against measles. When this has been accomplished, another great stride in preventive medicine will have been made. For those deeply concerned with this subject, Kato's<sup>15</sup> comprehensive review of the literature will prove exceptionally interesting.

Although measles is undoubtedly the commonest disease of childhood and one which is little feared by the laity, it is in reality a most serious infection. This fact received special emphasis in Emerson and Hopping's<sup>16</sup> report, in which it was pointed out that 63 per cent. of the measles patients at the Willard Parker Hospital in New York developed complications. Nevertheless, the general viewpoint of the laity is too often assumed by the physician. "The doctor said it was only measles." How frequently we hear such a quotation when the patient enters a hospital in a desperate condition because of a broncho-pneumonia complicating the measles. Then there are the numerous instances of otitis media, and not infrequently mastoiditis. More rarely, too, a streptococcus meningitis snuffs out the life of a patient who "merely had measles."

In large groups of hospital patients another complication of measles which is not generally considered is observed from time to time. Measles patients appear to be particularly susceptible to diphtheria, and when it occurs, it is likely to be of the laryngeal or tracheo-bronchial type. Because of the location of the membrane, diphtheria is not diagnosed early, but a laryngitis is attributed solely to the measles attack. Or in the case of difficult respirations an examination of the chest may suggest a broncho-pneumonia, whereas, the true condition is a tracheo-bronchial diphtheria. Swollen eyelids and discharging eyes or nose may mean diphtheria in one or the other or both. Diphtheria of the eyes, if not diagnosed early, may mean loss of sight.

There is much that can be done in the treatment of measles. In the first place, a well-ventilated room should be insisted upon. The room need not be dark so long as sunlight does not

stream into the patient's face. Nose and throat cultures should be obtained in every case of measles. One or two drops of a 10 to 15 per cent. solution of argyrol freshly prepared should be used in the patient's eyes two or three times a day, depending on the severity of the conjunctivitis. This latter procedure has a two-fold advantage. First, it helps to relieve the irritation which is present, and, secondly, it compels frequent observation of the eyes and discovery of possible complications, such as diphtheria or corneal ulcers.

Frequent examination of the ears should not be neglected and, of course, the usual consideration given to the diet and action of the bowels. However, what I regard as the most remarkable remedy in the treatment of measles is amido pyrine. About 1924 at the Children's Memorial Hospital in Chicago we experienced a small outbreak of measles. The temperatures of those attacked were unusually high, and so instead of using the customary salicylates, it was decided to try amido pyrine. The results were astonishing. Frequently, within an hour after the first dose of amido pyrine the temperature would fall from two to three degrees. Cough was also allayed and complications rare if this drug was given as early as the first day of the rash. In order to have some guide for the administration of amido pyrine the following dosage was arbitrarily adopted: one grain per year of age up to five years. Five grains the maximum dose, regardless of age, and in each instance administered either every four hours or else four times daily, depending on the severity of the case. This medication to be continued, as a rule, for about three days, or until the temperature remained below 100°.

On numerous occasions during the past few years the opinion has been expressed by me that amido pyrine was like a specific in the treatment of measles. Within the past two months my attention has been called to a similar view which was expressed by Loewenthal,<sup>17</sup> though I had not previously seen it. If a diagnosis of measles is made on the observation of Koplik spots before the appearance of the rash and amido pyrine is prescribed the results are even more striking, for the catarrhal symptoms and temperature are then kept under still better control.

At the Children's Memorial Hospital, the

Cook County Contagious Disease Hospital, and the Municipal Contagious Disease Hospital in Chicago the administration of amido pyrine is a part of the routine treatment for all cases of measles. A majority of the measles deaths in the institutions named occurred in patients who were suffering from some other ailment at the time measles was contracted, or else were active measles cases which already had measles complications before being placed under hospital treatment.

Following is a table in which is presented a brief summary of measles patients who were treated in three of Chicago's hospitals.

MEASLES—1928 to 1929 (Jan. to April 30).  
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Hospitals	Cases				Age	Sex		24 hr. Deaths	Total Deaths	Mortality %
	Amido pyrine	Complications	No amido pyrine	Complications		M	F			
Children's Memorial	22	18	4	6	2 9 mo.- 9 yr.	8	14	0	5	22 1/4
Municipal Contagious Dis.	37	17	3	20	14 6 mo.-44 yr.	24	13	1	2	5 1/2
Cook Co. Contagious Dis.	351	*	*	*	4 mo.-42 yr.	208	143	6	23	6 1/2
Total	410	*	*	*		240	170	7	30	

\*Figures not complete; all but about 30 cases received amido pyrine.

All of the 22 cases of measles which occurred at the Children's Memorial Hospital were suffering from some condition which was usually of a serious nature before measles was contracted, and yet among 18 of the number who received amido pyrine there were but 4 who developed complications following the measles attack. Of the 5 who died, it is doubtful if any would have survived the original illness for which they had been admitted to the hospital. One of these patients was suffering from a pericarditis with a mitral stenosis, two had broncho-pneumonia before the measles attack, one was suffering from a lobar pneumonia, and another had a tuberculous cavity and a bilateral otitis media.

At the Municipal Contagious Disease Hospital the most striking benefits from the use of amido pyrine were evident. There were but three of the 17 patients so treated who had any complications. One of these three, however, was suffering from a lobar pneumonia prior to admission for measles. Another who had a bilat-



eral otitis media did not receive amido pyrine until the fourth day of the rash and the third case in this group having a complication developed an otitis media. An the other hand, among the 20 who received no amido pyrine, 14 developed complications, of which the most frequent was otitis media.

The majority of cases recorded in the table were for the first four months of 1929. For example, among the County Hospital cases, but 51 of the patients were admitted in 1928, when there was only one death from measles which occurred in a child who had broncho-pneumonia at the time of admission and died within twenty-four hours. Of the 22 deaths occurring in 1929, six expired within twenty-four hours of admission, and one within forty-eight hours of admission. In 12 others some complication was diagnosed at the time of admission. In most of the 22 who died the patients were admitted later than the first day of the rash, so that the administration of amido pyrine in those was usually started late. Of the 22 deaths, 14 were due to broncho-pneumonia, one broncho-pneumonia and diphtheria, one measles and scarlet fever, one streptococcus meningitis, and one was a case of gonorrheal ophthalmia and measles. In four others the actual cause of death is not clearly defined, but was apparently due to broncho-pneumonia. There were no instances of mastoiditis. Exclusive of the twenty-four deaths, the mortality for 345 cases at the Cook County Contagious Disease Hospital was less than 5 per cent.

#### CONCLUSIONS

1. The present method for quarantining measles patients is of little, if any, help in controlling an epidemic.

2. Tunncliffe's anti-measles diplococcus goat serum is of definite value in checking epidemics of measles in hospitals or similar institutions if administered to susceptibles within three days of exposure.

3. Amido pyrine is the most important therapeutic agent in the treatment of measles patients for the following reasons:

- (a) It reduces temperature without injury to the patient.
- (b) It allays cough and appears to lessen the irritation of all mucous membranes.
- (c) It is of distinct value in lessening compli-

cations, and, therefore, shortens the course of the disease and tends to lower mortality.

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#### DISCUSSION

Dr. Maurice L. Blatt, Chicago: Dr. Hoyne's experience with contagious diseases began twenty years ago. In both his institutional and private practice he has had an unusual opportunity to study their treatment. His conclusion, therefore, must be given serious consideration.

Dr. Hoyne, in conjunction with Dr. Tunncliffe, has used a serum produced by the latter, and has found it satisfactory in his work. In twenty-seven cases exposed in one of my wards at the County Hospital last year only one developed a mild measles after the use of this serum.

Our experience this year has been different. Measles, like whooping cough, is difficult to diagnose early. Its early diagnosis is essential for successful prophylactic

treatment. It is impossible to control epidemics of measles until we have a good method of diagnosis. It is difficult to differentiate it at present from the ordinary upper respiratory tract infections so common in childhood. It is, therefore, extremely difficult in large wards to prevent the exposure of numbers of children to measles.

In private practice it is equally difficult to determine when a child is incubating measles. When the history is clear, however, Tunnicliffe's serum offers a valuable means of prevention.

Dr. Hoyne's recommendation of pyramidon is based upon his own observation. I have been familiar with this work through the reports of Dr. Hoyne's internes and associates during the past two years. These reports have been uniformly favorable. I believe that it deserves careful trial by a large number of observers doing clinical medicine. It should be used in doses approximately a grain per year of the child's age up to five grains at a dose. Like other coal tars, idiosyncrasies of individuals are to be expected.

Our greatest difficulty with measles is with its complications. Broncho-pneumonia and otitis media are common causes of deaths. Our statistics are not quite reliable, because many deaths are reported as broncho-pneumonia and not as measles. Measle cases should be given plenty of air, mild silver instillations in the eyes. Hygiene of the mouth is likewise valuable in the prevention of complications.

If otitis media develops, and it should be suspected whenever there is a temperature rise in a measles case, the drum should be punctured immediately.

In pneumonia we have found hourly doses of one cc. of camphorated oil valuable. It is particularly valuable in those cases in which cynosis is present. Liquid diet, mild catharsis, absolute rest, are imperative.

LAY COMMENT ON "PUBLIC HEALTH INSTITUTE" INSISTS THAT THIS OVER-ADVERTISED SCHEME "DISCREDITS CHICAGO, ITS DOCTORS AND ITS CITIZENS AND IS A MENACE TO ITS HEALTH AND INTEGRITY."

By BEN POINT

Editor's Note: Murmurs from every section of Chicago as well as from all over the country continue to re-echo the "Schmidt case" and the "Public Health Institute." Dr. Schmidt's expulsion from the Chicago Medical Society on the basis of strict ethical error was the flint that struck fire from the steel of thousands of minds that had been wondering just how and why the great venereal oracle had arrived at his pose of a modern oracle of Delphi.

In "*The Nor'wester*," a news-magazine pub-

lished at 3311 North Crawford Avenue, Chicago, the editor, Ben Point, in the issue of Wednesday, June 26, 1929, writes with a pungent pen about the Public Health Institute. Though from a lay pen, it would seem that the article deserves republication in this journal.

We hereby publish the article in full:

PUBLIC HEALTH INSTITUTE DISCREDITS CHICAGO—ITS DOCTORS AND ITS CITIZENS—IS A MENACE TO ITS HEALTH AND INTEGRITY

CHICAGO DAILY PAPERS, SUBSIDIZED BY INSTITUTE'S ADVERTISING AND "PRESS AGENT" MATERIAL—TWIST THE FACTS, GARBLE THE TRUTH, CREATING A FALSE ISSUE—LEADING THE PUBLIC TO BELIEVE THAT THE DOCTORS ARE SELFISH AND AT FAULT WHILE DR. SCHMIDT AND THE PUBLIC HEALTH INSTITUTE ARE MARTYRS

By BEN POINT

After having read the various news accounts, editorials and "press agent" publicity appearing in the daily papers during the past month, over the action of the Chicago Medical Society in its expulsion of Dr. Louis E. Schmidt, because of his connections with the "Public Health Institute," most people believe that the doctors who are responsible for this action are narrow, greedy, selfish and interested only in the almighty dollar, and are opposed to any effort to keep down the rising cost of medical service. They have also come to the belief that Dr. Schmidt and his colleagues are martyrs to the cause of "reducing medical cost," and are the victims of an unwarranted attack, etc., etc. In the meantime the real cause of all this trouble has been lost sight of—through the brilliant piece of "press-agenting" conducted by the sponsors of this institution that has been condemned by the doctors, because of its unethical advertising, and its other evil practices.

The writer, after careful study and investigation, has come upon some amazing facts—and has unearthed one of the most subtle pieces of press agent publicity ever perpetrated. So shrewdly was this publicity conducted that the "accused became the accuser" and attempted to put the Chicago Medical Society on the defensive.

First of all, before a discussion of the merits of the controversy is entered into—let it be definitely stated that the Chicago daily papers, because of the advertising they receive from the Public Health Institute and because of the connection of several of the sponsors of this institution with the ownership of several of these papers in question, were so influenced by the \$10,000.00 or more a year press agent of the Public Health Institute that they presented only their side of the case, and did not present the true charges of the medical association at all. In fact the case was so garbled as to make of the whole thing an entirely different issue—that of "lowering the cost of medical



service"—which has absolutely nothing to do with the controversy in any shape or form.

The medical association had for years condemned the practices of the Public Health Institute as inimical to the best interests of the people. There were many charges held against them. Improper advertising was only one. The profession classified it as a "semi-quack" institution. No doctors of any standing are associated with it. Thus when it was found out that the Illinois Social Hygiene League clinic, which was a semi-philanthropic organization and in good standing with the medical profession, had associated itself with, and had become a part and parcel of the Public Health Institute, changing its status of an ethical and charitable institution to that of the Public Health Institute, the Medical profession immediately became aroused and started an investigation of the facts.

Here was a reputable philanthropic organization being used by a discredited and disreputable "health institute" to further its unethical and evil practices.

This change was effected through the instrumentality of Dr. Louis E. Schmidt, its president, and chief of staff, who as was proved, was financially interested in this transaction as a mortgagee of the building in which this Social Hygiene League clinic was housed. In this way the Illinois Social Hygiene Clinic and Dr. Schmidt as president came in conflict with the Medical Society, was warned to sever his connection, and upon his refusal was ousted.

Now to understand why the medical profession condemns the Public Health Institute needs considerable explanation to the layman. Through its advertising it has given itself a halo of respectability and has increased its business to tremendous proportions.

First of all, what is the Public Health Institute? It is a corporation organized supposedly "not for profit," to treat "social diseases." While incorporated "not for profit"—it has a surplus fund of some \$800,000.00 which it has made over and above expenses in the past few years. Besides this tremendous profit it has spent further hundreds of thousands of dollars for questionable purposes. One item of great expense to the institute is advertising—nearly \$125,000.00 a year is spent in daily newspaper advertising alone. Several large donations are made yearly to several medical research laboratories (Rush Medical College, Chicago and Northwestern Universities, etc.)—ostensibly for the purpose of aiding research work, etc., but mainly to further the halo of respectability and to secure the good will of those connected with the universities. Also it is good publicity. Some \$50,000 a year goes for this purpose. The "Medical director" of the Public Health Institute draws the magnificent sum of \$25,000 a year for his share of conducting the institution on a "business like basis." This man, before the war, was an obscure doctor who had never identified himself with any ethical medical organization. He it was who conceived the idea of the Public Health Institute when he served in the army camps during the war. His theory is to introduce the army practice of treating

venereal diseases into civil life for both men and women, on a wholesale or "mass production" basis, which methods are wholly unsuited for practices outside of the army, as it will be later explained.

There are other large sums spent by this institute for other various and "dubious" causes. For instance, a "publicity director" gets \$10,000 or \$12,000 a year for his "press agent" stuff. The Illinois Social Hygiene League clinic gets \$12,000 a year to handle cases of poor patients that cannot pay the fee charged by the Public Health Institute. The Public Health Institute in this way practically controls the League. Immense sums go for the printing of literature and cards that are placed in every lavatory to which their agents have access.

Now all of these immense sums come out of the profits made on the "poor" patients, who number thousands. While the cost of each treatment is small (\$2.00, \$3.00 and \$4.00) the patient through the system they installed is compelled to come back innumerable times before he or she is considered "cured." So in the aggregate the cost of this medical service is much higher than what the average family physician would charge. The difference, however, is that the family physician charges a lump fee and treats his patient in a shorter time, but the lump fee seems larger when paid out all at once, than when paid out in small dribblets.

Thus it can readily be seen that there is no basis of fact whatever in the claim of the sponsors of the Public Health Institute that this service is cheaper in cost. It is much more expensive to the average patient in the long run.

There is another angle to the case, which few people recognize and that is, the multitude of complicated cases that the institute cannot handle because of its poor personnel and equipment. These cases are sent out to "recommended" physicians. Dr. Schmidt, himself, admits that his connection with the institute is too great a source of revenue for him to overlook. Thus a chosen few individual physicians are reaping the benefit of the institute's unfair and unethical advertising, and becoming rich thereby—for Dr. Schmidt is classified as one of the few "millionaire" doctors in Chicago. Most "successful" doctors, after a lifetime of devoted service are lucky if they have \$1,000 to \$5,000 left when they die. A large number of doctors leave nothing. Dr. Schmidt (and also Dr. Bundesen) are two of these "super-successful" ones that exceed this amount. But both have gained this success through advertising, or the results of advertising indirectly benefiting them, which all other doctors are not allowed to do.

Thus it readily can be seen that doctors connected with an institution such as this one, hold an unfair advantage over others not so connected.

Why is it the doctors restrain themselves from advertising? The answer is simple—so that the public—the layman—can tell the difference between a good, honest, educated and ethical doctor and the advertising

"quack" doctor, some of whom have no medical training at all.

There is no profession or trade or business that offers so rich a field for *untruths, exaggerations* and *dangers* through advertising as the medical profession.

If advertising in the medical profession were allowed the successful doctor would be the one that could exaggerate the best, could shout the loudest, and who would claim the most for his patients. Success would depend upon advertising ability—not on professional merits. To the ranks of the quack, the charlatan and the fakes that we now have, would be added hundreds more—and the dangers that confront the public today would become manifoldly more numerous.

Through this exaggerated and unethical advertising the Public Health Institute has acquired thousands and thousands of patients. It is an established fact that hundreds of people, scared by the institute's advertising of the dangers of venereal diseases, went there merely for an examination, to satisfy their minds that they were all right.

Many of these people were wrongly diagnosed, because of the defective quantity and quality of the personnel. As a result many were needlessly subjected to the expense and suffering that the treatment for venereal disease entails. It is also a well known fact that as a result of poor asepsis, cross infections are common and many an innocent and healthy patient became infected in the course of examination or treatment through the unclean hands or instruments used by the doctors, and their attendants.

This is unavoidable mainly because the institution is run on a factory plus quantity basis—not on a basis of real service and the right kind of treatment.

They do not treat gonorrhea or syphilis when complications have arisen, because they haven't the specialists on the staff or the equipment. These cases are sent out, to recommended doctors. Furthermore, the treatment of complicated cases requires more skill and time than they are able or willing to do.

Doctors that understand the ramifications and complications of syphilis and gonorrhea claim there is no set formula that should be followed as that used at the Public Health Institute. The individual cases should be treated according to the seriousness of the case, and according to the strength and bodily resistance of the patient. Yet here at this medical "factory" where quantity production is the essential qualification of the personnel—not quality of work, every patient—sick or well goes through the same routine.

#### PUBLIC HEALTH INSTITUTES

Approximately 80 per cent. of the cases the Institute treats are gonorrheal cases. Their "business" policy is to treat these cases which constitutes the majority, and not to bother with the more complicated cases. Yet it is a well known fact among doctors that gonorrhea is a self-limiting disease and hardly needs any treatment at all.

Again it can be seen that this Institution cannot and

does not perform its service in anything like the right way. At the most, it is a cheap service and any conscientious family doctor is well able to handle this class of work far more efficiently, more safely and at *less cost!*

The trouble with the average person who contracts a social disease is that he fears disgrace. Therefore he is usually inclined to go to someone unknown to him for treatment. Upon this psychological state of mind of the afflicted venereal patient the advertising "quack" preys.

Young folks should be educated, first how to prevent contracting social diseases, second how to cure same, and then should be taught to go to their own physician, who will not rob them and will handle the disease in the proper manner.

The case of the medical profession against this institute is solidly built upon facts and disclosures, that they, the medical profession, have investigated. There are many able minded laymen that cannot see why this Institute is a menace to the health and integrity of the community. In a matter of this kind—these men should withhold judgment, because they are not qualified to speak, regardless of their success or eminence in the business world.

Factory specifications and quantity production will never be tolerated in the medical profession nor will it ever work out successfully or safely. Nor will unethical advertising ever be accepted by the medical profession or by the public at large, once they know the tremendous dangers that face them from unscrupulous persons that would take advantage of this dangerous weapon. Education is the thing needed—that, and the effort of the organized doctors themselves, in keeping down the cost of medical service (along with the increased cost of everything else).

In a final analysis of this Institution and its practices it may be added, that even if it were run without advertising, and the inferior personnel were replaced by high grade specialists and the conditions in general improved so that the medical service ranked with that now rendered by individual physicians, the theory of running the institution on a "*quantity production basis*," like a high geared factory, would be wrong—simply because the human machine cannot be standardized like the mechanical machine. The human body has too many variations and complications—every part is different while automobiles or other mechanical devices have their parts standardized.

Then it must also be remembered that such an Institution as the Public Health Institute is not needed in a city like Chicago where there are enough doctors, hospitals and free clinics to take care of thrice the amount of work now handled by them, at less cost and more safely. The claim of The Public Health Institute that it renders cheaper medical service is something that has yet to be proved—thousands of doctors do this work at less cost and do it immeasurably better. For the very poor there are hundreds of clinics and philanthropic agencies.



The public "sympathizes" with Dr. Schmidt because of the false impression of the issue conveyed to them by the daily papers and the press agenting of this institution.

The professional reputation of Dr. Schmidt or Dr. Bundesen are not involved, although they both anticipated and *clearly understood* the issue, before it reached public print. They are involved in so far as they were parties to the insidious propaganda, practices and conduct of the Public Health Institute, which *is the issue*. They aided and abetted the press agenting of this false issue—that of "cheaper medical service" which is *clearly not the issue*.

The job for the medical profession and all other fair minded people is to let the public know the *true facts!*

It will be difficult now to convince the public that Dr. Schmidt was wrong and that the Public Health Institute is not needed. The public—because of the extreme and favorable publicity given to the issue by the newspapers have been sold on the false issue presented them. The easiest way in the world to convince a person of any argument, is by having it affect his pocketbook. The public has been given to believe that the medical association took action against Dr. Schmidt and the Public Health Institute because they want to "keep up" the price of medical service. This is not true. Like any other profession or business, the medical profession's sole desire and interest is to give service to the public at the least cost possible. Naturally, like in all other trades and professions there are doctors who charge too much—the many cannot be judged by the few.

## HISTOLOGY AND PATHOLOGY OF THE ZONULA—THEIR CLINICAL SIGNIFICANCE IN THE CATARACT OPERATION\*

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The Zonula of Zinn, or suspensory ligament of the lens, is a system of fibers extending between the retinal epithelium of the ciliary body and the lens,<sup>1</sup> having for its function the fixation of the latter, and, with the action of the ciliary body, takes part in the function of accommodation.

These fibers are very much like connecting elastic tendons, transparent, and about 4 to 35 microns in width and can be stained with orcein and Weigert stain, and especially with picrofuchsin.

The anatomical conformation of the normal

fibers of the zonula form a triangle with the base towards the lens, and its apex towards the ora serrata, with its anterior surface in contact with the retinal epithelium of the ciliary body, its posterior surface lying on the peripheric condensation (Hyaloid membrane) of the vitreous and all bathed by the aqueous humor and occupying the space known as the posterior chamber (Fig. 1).

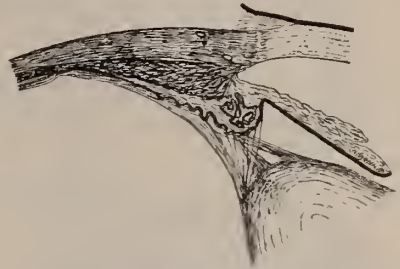


Fig. 1. A diagrammatic drawing representing the normal conformation of the zonular fibers with their attachments in the lens and ciliary body.

These fibers are inserted into the hyaline capsule of the lens in three different places in a crown-like formation, called the zonular lamella. Each fiber divides into several small branches just before their insertion arriving tangentially to the surface of the capsule, ending brush-like.

In regard to the three different insertions in the periphery of the lens, some of these terminate in the equator, while some others are inserted in front and others behind it. We can classify these as equatorial, pre-equatorial and post-equatorial. The pre- and post-equatorial fibers cross and the former are inserted between the ciliary process and the ora serrata, while the latter travel in the direction of the ciliary process. The equatorial fibers are inserted between the other two. Some divide into smaller branches and others terminate in feather-like formation; all end in the epithelium of the ciliary body.

Besides these fibers, we find others branching off, taking a backward course, and terminating in the same form. In regard to the final termination of these fibers in the retinal epithelium of the ciliary body, there has been much controversy.<sup>2</sup>

Salzmann<sup>3</sup> claims that the fibers take their insertion in the *limatens interna ciliaris* that covers the ciliary epithelium. The insertion be-

\*Read by invitation before the Eye, Ear, Nose and Throat Section at Annual Meeting Illinois State Medical Society, at Peoria, May 22, 1929.

ing in the same manner as in the capsule of the lens (Fig. 2).

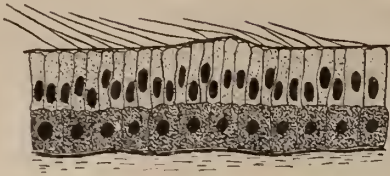


Fig. 2. Sketch showing Salzmann's idea of the attachment of the zonular fibers to the limatans interna ciliaris.

Schon<sup>4</sup> claims that the fibers are made by an extremity of the superficial or clear cells (Fig. 3).

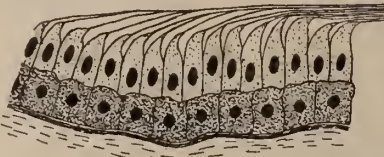


Fig. 3. Schon's theory of the zonular fiber attachment to the extremity of the superficial or clear cells.

Wolfrum<sup>5</sup> claims that the fibers do not terminate in the cell, but pass on through it and end in the agglutinant lamina between the pigmented and clear cells. This lamina is continuous with the external limatens membrane of the retina. Therefore, this theory would seem improbable since we know that this membrane is made by the external extremity of the fibers of Mueller which do not exist in the epithelial cells of the ciliary body.

Mawas<sup>6</sup> claims that these fibers terminate in the cuticula surrounding the clear cells, especially between the cells in their entire length and with some branches from the cuticula, originating in the capsule of the clear cell, lying between the latter and pigmented cells. (Fig. 4).

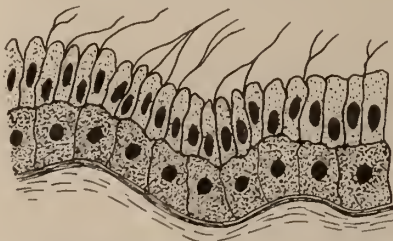


Fig. 4. Mawas's explanation of the attachment of the zonular fibers between the cells.

Damianoff<sup>7</sup> subscribes to this theory of Mawas,

but believes the fibers reach only halfway to the base of the cell.

Terrien<sup>8</sup> claims that the fibers pass through the clear and pigmented cells and terminate in the elastic lamella of the ciliary body.

Metzner<sup>9</sup> follows the fibers still farther and believes they terminate in the stroma of the ciliary muscle.

Schon said in 1893 that some of the fibers reach to and terminate in the border of the retina, or in the stroma (fibers of Mueller-Neurologia tissue).

Besides these fibers already mentioned, there are other fibers, known as the inter and intra-ciliary fibers which are not described here because of their non-importance in this connection.

After this brief review of the zonular fibers, a short explanation of the method of preparing specimens for studying them is here presented.

The eye is fixed for 24 hours in five per cent. formaldehyde solution; then dissected, all the work being performed under water. The first step is to divide the cornea and sclera in such a way as to turn back the whole tunica fibrosa, thereby exposing the whole of the uveal tract, showing nerves and blood vessels which lie in bold relief in a black background (Fig. 5).

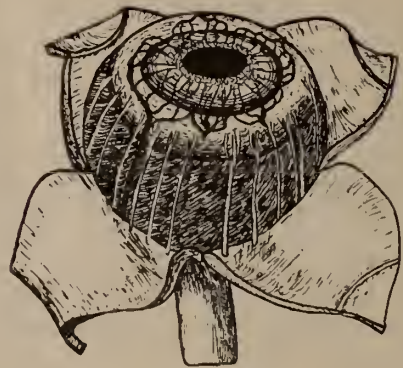


Fig. 5. The eyeball after opening of the cornea and sclera. (After Sappey.)

The flaps of the tunica fibrosa are now cut away and the choroid is cut through at the equator (Fig. 6), leaving the retina intact. With a spatula, the choroid and ciliary body are now gently dissected from the retina anteriorly and drawn forward, bringing the retina into view.



With the parts in this position, relative to each other, it can be seen that some of the zonular fibers are attached to the ciliary body and choroid while many others are firmly attached to the ora serrata.

Continuing with the experiment, gentle trac-



Fig. 6. Cross-section of eye-ball with cornea and sclera removed and beginning dissection of the uveal tract.

tion is made in an attempt to separate the ciliary body and choroid from the retina, and to our surprise, we find that the fibers going to the choroid and ciliary body are readily broken and are freely separated from the lens while the latter remains in place firmly held by the retinal fibers (Fig. 7).

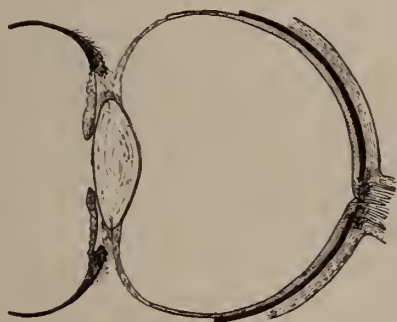


Fig. 7. Choroid and ciliary body pulled forward with breaking of fibers going to the ciliary epithelium.

The next step in the experiment is to cut the retina at the equator in the same manner as the choroid was cut; then with gentle traction, the retina, zonular fibers and lens freely separate from the vitreous body and the latter remains in its normal ball-like shape. This shows the absence of any attachment of the zonula fibers to the vitreous (Fig. 8).

In review of Figure 8, first is seen the sclera

and cornea, then the iris, ciliary body and choroid with the broken fibers attached; second, the lens, zonular fibers of the retina and the anterior portion of the latter firmly attached; third, the unbroken vitreous body with its peripheral condensation, or hyaloid membrane; and,

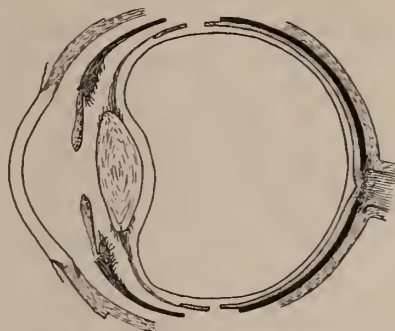


Fig. 8. Schematic representation of the different structures after complete dissection.

fourth, the three layers of the globe attached to the optic nerve by axes.

Microscopically, the zonular fibers are seen coming from the lens, outward to the ciliary processes, where some of them are left: and, following these bundles of fibers backward to the ora serrata, it can be seen that still other fibers are left all along the way until the ora serrata is reached and at this point some fibers seem to pass behind the retina and become lost in its stroma—maybe in the fibers of Mueller.

Remembering now the experiments of Dr. Barraquer,<sup>10</sup> concerning the resistance and elasticity of the zonular fibers, regarding which he says, "In zonulas of individuals more than 30 years of age with a transparent lens, the linear stretching amounts to only one millimeter, which these fibers can stand, whereas in young individuals, their elasticity is so great that the stretching may be twice as much."

This decrease of resistance proceeds parallel with the loss of accommodation which begins at about the age of 45, and is complete at 55, at which latter age the resistance and elasticity of the zonular fibers is very little.

In myopic subjects this resistance is decreased also, probably because the accommodation is practically nil. Barraquer<sup>10</sup> has also shown that the highest degree of fragility in these fibers has been found in eyes with cataractous processes

in which the degeneration seems to be extended to the zonular fibers.

From these experiments, it is found that the zonular fibers are subjected, like all other organic tissue, to the laws of life and death, in virtue of which old tissues undergo the process of sclerosis, which is increased when a pathological condition is added to the senile trouble.

The zonular fibers, not having proper nutrition, must suffer indirectly and when any localized lesion in the organs surrounding them, such as cataract, iridocyclitis, glaucoma, in vitreous diseases, alters the aqueous humor upon which the zonular fibers depend for their nourishment.

It is not the purpose of this paper to elaborate upon the many pathological processes which may, either directly or indirectly, alter the normal function of the zonular fibers, but merely to bring out a potential truth, which by virtue of its presence, may be utilized as a valuable clinical adjunct.

If the zonular fibers are attached to the retina, and the intracapsular operation for the removal of cataract be performed after the age of 55, it is reasonable to suppose that it can be done without danger, because of the loss of resistance and extreme fragility of the zonular fibers of that age. But in younger individuals, in whom the resistance and elasticity of the zonular fibers is high, and the fragility low, detachment of the retina and iridocyclitis might follow.

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#### SUCTION TONSILLECTOMY

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CINCINNATI

Surgical removal of the faucial tonsil is the most commonly performed surgical operation to-day and the operation is performed by the general practitioner, the general surgeon and the specialist on nose and throat.

While strictly speaking, within the domain of the nose and throat specialist, today the tonsil in situ lies in a veritable No-Man's-Land. Outside of the larger cities, perhaps, it is safe to warrant the assertion that as many or more tonsillectomies are performed by the general surgeon and the general practitioner, than by the specialist. This is, of course, not a desirable state of affairs, but that such is the situation cannot well be gainsaid. Certain economic phases of present-day medical practice are in some measure responsible for this state of affairs. When the general practitioner and the general surgeon refer a case to the throat specialist for a tonsillectomy there is a certain immediate loss of prestige with the patient, family and friends by the referring physician. This does not hold, of course, with the higher classes of broadly educated people. There is also the loss to the referring physician of a remunerative fee for what seems to the average physician a very minor operative procedure. They seem to have the general idea that with a pair of tonsil grasping forceps, scalpel, scissors and tonsil snare, plus a little "nerve," almost any physician can do a tonsillectomy. This idea is unfortunate for the profession as a whole and especially so for the operation and for the patient.

Where properly indicated, tonsillectomy is undoubtedly a beneficent procedure; but where performed indiscriminately, with poor operative technic and end results, it tends to discredit a useful surgical operation. Of a considerable series of tonsillectomy cases studied post-operatively, some 73 per cent. were found to be faulty in that tonsil tissue in varying size was found to have been left in one or both fossae. These enucleations were performed by presumably competent operators; so what must the percentage be of faulty operations on the general run of tonsillectomies over the entire country?

Tonsillectomy is a very difficult surgical op-



eration to perform properly on some cases. It is not easy on any, though with the expert operator some are easier than others, or at least seem to be so to the on-looker. The more expert an operator becomes, the greater percentage of cases he operates on are "easy." Practice naturally tends to perfection! In some cases, tonsillectomy is a dangerous operation to life and the less expert the operator, the more dangerous this "minor" operation becomes. If more physicians realized the difficulty and the danger in this work, the fewer unqualified physicians would attempt it.

One reason the operation is difficult is because the technics employed are difficult. With discard of the old-time tonsillotomy as performed with the guillotine, the so-called snare and dissection technic has been evolved and is undoubtedly the operation used by the majority of present day operators. It is the operation the older generation of present-day physicians were taught and, becoming more or less expert with this technic, they were loath to change to anything heralded as newer and better. There could be no better, in the eyes of many.

However, in 1909, the late Greenfield Sluder presented to the profession his highly ingenious Sluder operation for in-capsule enucleation of the faucial tonsil. This was immediately heralded as "the" tonsil operation and every progressive operator at once equipped himself with a Sluder instrument, and hundreds secured personal instruction from the master himself. It was a wonderful thing for the profession and it impressed upon all the desirability and the necessity for the complete in-capsule enucleation of the tonsil, where its removal was indicated. The Sluder technic sounded the death knell of tonsillotomy. However, as many physicians found to their sorrow, the Sluder technic is a very difficult technic to master. For those not so physically equipped as Sluder in manual strength, it was a physical impossibility for them to enucleate perfectly a certain percentage of the small, deeply submerged or badly adherent tonsils. The more expert the operator, the greater percentage of tonsils he could "get" with the Sluder. Difficulty of the technic may be gauged by the fact that Sluder stated he performed a thousand tonsillectomies before he reached per-

fection with the technic. This meant that thousands of tonsil operators would never reach perfection with so difficult a technic. The hundreds of modifications of the Sluder instrument bear silent testimony to the difficulty of the operation. Sluder claimed something around 99 percent. of successful enucleations with his instrument. Skillern, Jr., of Philadelphia, using the LaForce modification, estimates 97 percent. of successful enucleations with the technic. It is doubtful, however, if the average operator with a Sluder technic gets 50 percent. of perfect enucleations with the operation. The inherent difficulty of the basic technic is unchanged and unchangeable to any great extent, despite the numerous modified Sluder instruments of today. Many operators then use their Sluder on the hypertrophied tonsils of childhood and in general on suitable cases in adults where general anesthesia is employed, with reserve of snare and dissection for local anesthetic cases and for all cases experience tells them cannot be "gotten" successfully with the Sluder.

This makeshift is not entirely satisfactory, however, and even at its best, snare and dissection often present great difficulty and dissatisfaction both to the operator and the patient.

It is true that radium, X-ray, ultra-violet light and electro-coagulation and desiccation treatments have a certain, and often very useful application to the pathologic tonsil, especially electro-coagulation and desiccation. These modalities are two-edged weapons, however, which require much experience, judgment and technical skill for proper usage, so that their employment is limited as a rule to physicians with this special training and experience.

For the vast majority of operators, some form of surgical tonsillectomy remains the method of choice.

✕ With a view then to the elimination of the difficulties and dissatisfactions of the older tonsillectomy technics and to development of an operation basically sound and so comparatively simple in technic that the average operator could master it easily and, above all, could "get" any and all types of tonsils cleanly and easily in-capsule, in a rapid, practically bloodless enucleation, with equal applicability to local and to general anesthesia operation, suction tonsillec-

tomy has been developed gradually to its present state of perfection. (Figure 1.)

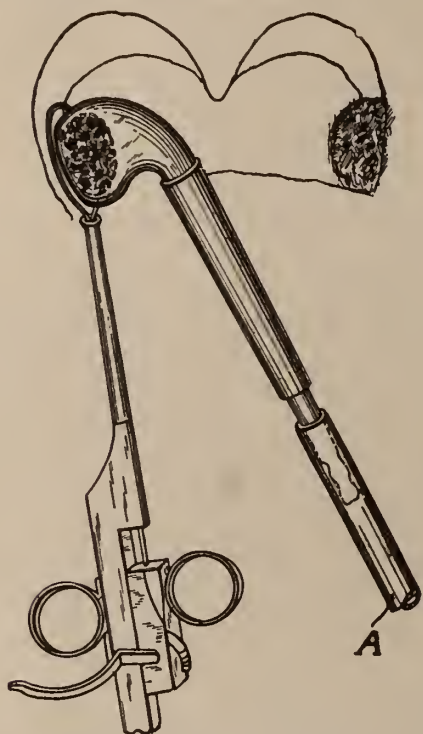


Fig. 1. Tonsil engaged; snare loop in position for enucleation. Air pump not shown. Tubing A to pump.

There it rests on its merits today and the steadily increasing number of former Sluder and snare and dissection operators who have tried it out with favor and much favor, bear eloquent testimony to its worth.

With perfected equipment and perfect technic, the average operator should afford all of his patients a perfect, clean, rapid, practically bloodless, in-capsule enucleation of the faucial tonsil, and this without damage to contiguous throat structures. This is what suction tonsillectomy offers.

Replacing the various steps in snare and dissection and the "strong arm" muscular effort of the Sluder, suction tonsillectomy employs the principle of suction, developed by the modern electrically driven compressed air pump and applied through a tonsil suction tube of special design. With this the tonsil is lifted from its fossa and out between the pillars and while thus held suspended by suction in a semi-inverted position in the tube mouth, a previously adjusted dull wire snare is carried down the shaft of the suction tube, over its bulbous head and

mouth, tightened down and the tonsil enucleated; virtually "shelled-out" in a remarkably rapid, practically bloodless manner.

The tonsil tube is connected to the suction pump by about four feet of flexible quarter-inch rubber tubing. At the outset of application of the suction tube to the tonsil this is vacuum-cleaned of all pus and crypt exudate, potentially infective material, which in the older technics is usually squeezed out into the pharynx during instrumental manipulation and if aspirated into the air passages, as under general anesthesia, is undoubtedly at the bottom of a majority of cases of post-operative lung abscess. This material from the tonsil crypts is carried out of the throat and safely lodged in a vacuum reservoir bottle at the outset; hence our failure to locate one single case of lung abscess after a suction tonsillectomy. On this basis we have steadily urged that all tonsils be suction cleansed prior to enucleation by any technic. This takes but a moment and does not in any way interfere with subsequent enucleation steps.

It might seem at first glance that the equipment and technic is complicated. Far from it. Every well-equipped physician today has an electrically driven compressed air pump and, if he is doing tonsil work, a tonsil snare. Suction pump, tonsil snare, tongue depressor and set of three sized tonsil tubes comprises the basic equipment. Any type of air pump may be employed provided it delivers sufficient suction to lift the tonsil from its fossa.

Perfected equipment, of course, makes for better technic. The air pump should be foot-switch controlled, equipped with an accurate gauge and regulatory device, and with some form of suction reservoir bottle between the suction tube and the pump proper. This reservoir bottle serves to protect the pump and also acts as a receptacle for any blood and mucus aspirated from the throat in the course of general anesthesia tonsil and adenoid operation. A ratchet type snare such as the Beck-Pierce, Pierce-Mueller or Beck-Schenck, as it is variously named, is best adapted to the operation, although hundreds of operators employ whatever type of snare they happen to have.

The tonsil enucleating tubes are made in three sizes, of a special glass, with rubber covered shafts. A metal tube would destroy the high



visibility, which is one feature of the operation (Figure 2.)

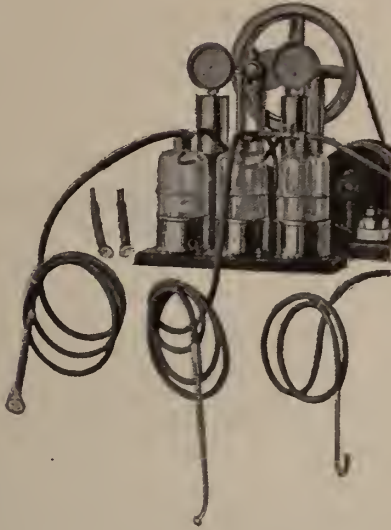


Fig. 2. Robertson Duplex Air Pump, with Waring operative hook-up. Foot-switch and bone drill not shown in illustration.

The air pump illustrated has a special hook-up developed in connection with the operation, and aside from full equipment for routine office usage of compressed air and suction, as well as tonsillectomy, may be equipped with a flexible cable bone drill attached to the shaft of pump motor, for use in mastoid, intra-nasal and general bone surgery. With this hook-up a second suction line and reservoir bottle, serves as an independent aspirating agency for blood and mucous in tonsil-adenoid operating. Ether vapor may be delivered from pressure side of the pump, if desired.

With general anesthesia operation, a mouth gag is employed and suction cleansure of the pharynx as indicated; otherwise the equipment and technic is the same as for local anesthesia operation.

The operation "gets" all types of tonsils with virtually equal ease. There is no dissection; no manual muscular exertion as with the Sluder technic; and no damage to pillars, uvula or other throat tissues.

With local anesthesia, patient is seated in chair upright, tongue depressor employed with left hand for the right tonsil, and vice versa. Light is thrown into pharynx from a head mirror or electric head mirror. The size of tonsil tube is selected which will just approximately include the given tonsil; this is connected to air pump

by four feet of flexible rubber tubing. Snare loop is adjusted over shaft of tonsil tube and allowed to hang suspended by the loop outside of mouth. For the right tonsil, the tonsil tube in the right hand is gently grasped much as we would a pen, carried into the mouth and applied to the tonsil with a dipping, somewhat cup-like motion from below, forward and upward.

The oval mouth of the tonsil tube is applied to the tonsil very much as the Sluder loop is used, but without any pressure. The posterior lip of tube mouth slides in front of the posterior pillar, while the anterior lip of tube mouth goes posterior to anterior pillar. If the tonsil is badly adherent or submerged, the tube mouth is gently pressed over the tonsil in between the pillars, which are thus pushed aside. Suction application through foot-switch instantly lifts the tonsil from its fossa, the pillars being left behind out of harm's way. With prominent, hypertrophied tonsils the tube mouth is merely carried into position opposite the tonsil, which slips into the tube mouth immediately on suction by the pump. The clear glass of tube permits direct inspection of the tonsil as it is engaged. Inspection at once tells the experienced operator that the tonsil is out of its fossa and completely grasped in tube bowl; but this may be confirmed by palpation with left index finger over anterior pillar, when the tube lip is felt under the pillar. If the tonsil was only partly engaged, the rounded pad-like protrusion of the unengaged portion of tonsil would be felt. If the tonsil does not lift out immediately, it is safe to conclude that too small a tube is being employed; or that the tonsil is bound down by dense adhesions. In the latter case, repeated tugs by alternately starting and stopping pump with the foot-switch will slowly stretch adhesions and the tonsil slowly seen to be slipping into tube mouth. If the tonsil is not engaged properly, we release it by disconnecting the slip-on end of rubber tubing from tonsil tube shaft; reconnect tubing to tonsil and reengage the tonsil properly. The tonsil may be thus picked up and released at will, without any laceration or damage to it. If a pillar is picked up by the tube, the tonsil should be released and reengaged properly. With a little practice tube usage becomes almost automatic.

In short, we do not proceed with enucleation proper until the tonsil is properly engaged.

With the right tonsil out of its fossa and properly engaged in mouth of tonsil tube, which is held by the right hand; the tongue depressor is laid aside and the snare picked up in left hand, its loop quickly carried down shaft of tonsil tube over its bulbous head and tightened down by direct pull on trigger of snare. With pressure, the snare loop slips off end of tonsil tube in back of tonsil, and is still further tightened down so that the tonsil is firmly engaged. With further direct pull upon trigger of snare, the tonsil may be enucleated instantaneously. We prefer the slightly slower ratchet enucleation as tending to a more completely bloodless enucleation. The ratchet trigger is now carried backwards by the little finger of right hand, and the snare and tonsil tube held together by right hand and more or less parallel in position, while the ratchet ring is manipulated by the left hand. Suction is kept on during this maneuver, so that when the tonsil is enucleated, it is held in the suction grasp of the tonsil tube, which thereby acts as a grasping forceps. Snare and tube containing the enucleated tonsil, are thus removed from the mouth together. If we did not employ the suction tube as a holding forceps, the enucleated tonsil would roll free in the pharynx, and be difficult to grasp and remove from the mouth. Properly performed, it is found that even the badly adherent tonsil is dissected cleanly and rapidly, with a perfect in-capsule enucleation; and with practically no bleeding in the average case. The slow tightening of the snare loop through ratchet usage pinches through the small vessels running into the tonsil, and they are thus sealed against open free bleeding. ~~The~~ tonsil should be carefully examined after enucleation to see that its capsule is intact. If any break shows in the capsule it is evidence that a piece of tonsil has been torn off and left in situ. After examination of the tonsil, the fossa should also be carefully examined to see that it is clean, and also that there is no lingual tonsil or subtonsillar lymphoid tissue below the fossa proper. The time to do a perfect tonsillectomy is at time of operation. A No. 8 snare wire of best quality is desirable; and the snare must be carefully adjusted beforehand, as the operation makes

much heavier demand upon the snare than as ordinarily used.

The left tonsil is removed with identical technic, except that for the left tonsil the tonsil tube is held in the left hand and the snare in the right.



Fig. 3. Snare with ratchet.

For children a light drop method ether delivered by the apparatus illustrated, is found to be very satisfactory. For local anesthesia, the operator may employ whatever anesthetic technic he likes best. For adults, we prefer a pre-operative dose of oral fibrogen, and luminal. Five per cent. cocaine for surface anesthesia, and 1 per cent. of novocain, antipyrin and adrenalin for injection. A good many adult local cases do not even expectorate blood tinged saliva into the pus basin, and at the most the average case merely expectorates a little blood streaked saliva, rarely more than this, and very rarely indeed enough show of blood to require the slightest attention. Of course, any bleeding vessel if encountered, should be handled by ligature or suture. Very rarely indeed, however, will the suction tonsillectomy operator encounter primary hemorrhage and we have never noted secondary bleeding. In children, of course, there is usually a consider-

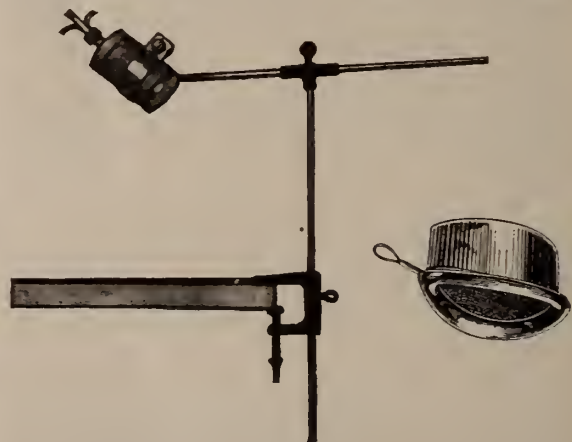


Fig. 4. Improved Yankhauer-Waring Anesthetic Cone with SIMPLEX Dropper Arm.

able amount of mucus and saliva in the throat during an ether anesthesia, also blood from



adenoid enucleation. The throat is easily cleared, however, by aspiration from the suction pump. The air pump hookup illustrated carries a second, independent suction line, which is employed solely for aspiration purposes.

Advantages of suction tonsillectomy over the older technics, may be briefly summarized:

The technic is very simple and easy; so much so that any operator of average ability is enabled to do good, clean enucleations almost from his first case. Dexterity is quickly acquired, so that even the difficult cases become easy by comparison. This means that the general practitioner who prefers to do his own tonsil work, can do so easily, cleanly and safely. The general surgeon and the specialist will do better and more rapid tonsillectomies than possible with the older technics. This rapidity is astonishing. Not that extreme or spectacular rapidity should be our goal, but the operation is inherently rapid, and this is of advantage to both operator and patient. The local anesthesia patient has his tonsils removed so rapidly and painlessly that he is under little nervous strain. He is not frightened by fear of hemorrhage. No damage is done to pillars, uvula or underlying throat structures. Consequently there is a minimum of post-operative pain and discomfort and convalescence is just one-half shortened. The operator works in a clear field, with every step under direct observation. There is no blind groping through a blood filled pharynx, or worry with a post-operative hemostasis. The nervous strain on the operator is far less, and this means he can do better and more work with less effort. It is practically a one-man job. There is little for an assistant to do, except to steady the head in position for general anesthetic work. The operation is so rapid, that only a very light, brief general anesthetic is required, as in children. Economic and other conditions are such that a good many physicians do their tonsil work under more or less adverse conditions as to equipment, assistance, etc.

Suction tonsillectomy may be performed in the well-equipped office or even, where necessary, in the private home, with an ease and safety that compares well with the work done in hospital and clinic with the older technics. With our poorer patients, by the time they have paid for hospital stay, anesthetic, use of operating room,

etc., little is left to compensate the operator himself. With suction tonsillectomy, all of this expense may be eliminated where indicated, and the operator thus enabled to derive a proper fee for his work, to say nothing of the added prestige.

The technic is the same for both local and general anesthesia, and on all types of tonsils. Suction tonsillectomy "gets" all types of tonsils with virtually equal ease. We do not employ one technic on the "easy" cases, and then have to resort to a different method on the badly submerged, adherent tonsils. No heavy-handed muscular exertion is required. The operation is one of delicacy and balance throughout. There is no tedious, time-consuming "dissection" so-called.

Post-operative lung abscess is practically unknown after suction tonsillectomy. We have never been able to find record of a case anywhere, and why? Immediately upon application of the suction tube to tonsil, it is vacuum-cleaned of pus and crypt exudate in amounts that are often astonishing. This potentially infective material is at once carried out of the throat and lodged in the suction reservoir bottle before the tonsil is enucleated. In snare and dissection and in Sluder technic, pus and crypt exudate is often squeezed out into the throat during operative manipulations. This, if aspirated into the air passages, may and undoubtedly often does eventuate in lung abscess. We advocate suction cleansure of all tonsils prior to enucleation, whatever enucleating technic may be employed subsequently. This takes but a few seconds, and does not interfere with any enucleation technic. With suction tonsillectomy this vacuum-cleaning of the tonsil is merely an integral, preliminary part of the technic, and occurs routinely.

The equipment illustrated, and the technic employed, of course, represents a number of years constant study and effort towards perfection. Naturally, perfected technic means perfect tonsillectomies; likewise, proper equipment is of immense value towards this end. For this reason, we advise all operators taking up suction tonsillectomy, to equip themselves with proper apparatus, and to study the technic carefully and faithfully, so as to apply it correctly. The results they will obtain, will amply justify this.

In the final analysis, our public becomes the judge of the success or failure of any new operative technic. It is easy for the advocate to become overly enthusiastic, or to become blinded towards defects that others can see. A satisfied patient is the best advertisement we can have, and such a patient spreads the glad tidings with a rapidity only exceeded by that of a dissatisfied patient. Patients and friends very quickly note the difference in progress between suction tonsillectomy patients and those operated on by older technics. They all seem to get along nicely, no complications, no hemorrhages, no prolonged or tedious convalescences; nice, clean, perfectly functioning throats. Instinctively they compare this picture with that of others operated on by the older technics. There is a difference, and the public soon notes that difference. Likewise, hundreds of careful "show me" types of operators have seen the difference, and more see this day by day.

7. E. McMillan Street.

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### BASIC SCIENCE STATUTES\*

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*Legal Status of the Cults.* The cults, notwithstanding the weakness of their theories, have been making steady progress with legislative assemblies throughout the country, and undeniably have obtained from them favorable recognition by law. In some states they have won all that they have sought, including their own administrative boards, entirely independent of the higher general professional standards maintained by the state and of the administrative agencies for enforcing them. In other states they have won substantial recognition without separate boards. But it is undeniable that throughout the country as a whole they have made noteworthy progress during the past thirty years in establishing for themselves a very considerable legal status, and that they have seriously retarded and impaired the establishment

and maintenance of the single standard of professional qualification for all physicians alike.

Those of us who have been engaged from time to time in presenting arguments to legislative assemblies respecting the basis for the regulation by law of the occupation of healing the sick, and therein have been supporting the establishment, or maintenance, of the single standard of qualification for all physicians alike, regardless of the disagreements among devotees of the so-called "schools" and "systems of healing," have been forced to the conclusion that the cults, by various means, most of them disreputable, have induced a large part of the public and many of the legislatures to give them friendly and substantial recognition to the very perceptible detriment of the public health.

It does not matter that such recognition is illogical, detrimental to the public health, obstructive of the maintenance of proper professional training and standards of scholarship, and founded very generally, in the last analysis, on the inclination of legislators to yield to persistency rather than reason.

*Corrective Legislation.*—The fact that the claims of cults are in truth without merit, but nevertheless are recognized by law, moves us to seek a method, indirect though it must be, of protecting the public health against the low standards of professional training advocated and established by them. From time to time during the existence of the cults, various suggestions have been made to this end. One of the oldest is that of providing by law that knowledge of only a few fundamental sciences shall be required legally to authorize a physician to heal the sick, without regard to the *method* of his treatment of diseases, and that knowledge of therapeutic agencies of every kind shall be disregarded in conducting the official examinations.

#### "Basic Science" Statutes Not Entirely New.

This plan has recently been developed into the existing so-called "basic science" statutes. There are some new features about these statutes; but the basic idea of eliminating from the official examinations the controversial subjects is not new. In 1881 Colorado passed an act for licensing physicians, in which it recognized certain sciences as basic in the education of physicians, and specifically eliminated materia medica and therapeutics from the required exami-

\*Read before the Annual Congress on Medical Education, Licensure and Hospitals, Chicago, February, 1929.



nations. This Colorado act excluded these controversial subjects in order to avoid the evils of special legislation for various cults. The act did not recognize any cult, as the basic science statutes do either impliedly or specifically. It was continued in force for twenty-five years, when, in 1905, its successor reenacted essentially the same plan, but not without mentioning osteopathy, and continued for another decade, when the cults achieved more particular recognition in subsequent legislation.

Under the old Colorado statute examinations were conducted in every necessary science except materia medica and therapeutics, the two subjects over which the controversies have arisen. This was a logical solution of the difficulty. If it had also provided for the appointment of examiners not in any way connected with the practice of the healing arts, it would have been a truly basic science law and might have survived. But it was finally discarded because the examiners in control were appointed from the regular physicians, who were charged with not being willing to give the representatives of the cults an impartial examination in the various subjects. The charge, of course, was untrue. Nevertheless, its constant reiteration brought about the destruction of the single standard erected by the statute, and substituted specific recognition of the cults.

*Theory of the Basic Science Statute.* Serious attention may well be given to the adroit method that has been embodied in the modern basic science statute. It proceeds on the assumption that cults exist, and have substantial legal recognition in separate boards, within the jurisdiction, and that all of the statutes establishing methods for licensing physicians of every kind should be amended by another statute requiring of physicians of all cults accurate knowledge of certain sciences deemed basic in the opinion of members of all of the cults. Whether resort to such a basis statute will prove to be merely an overwhelming victory for the cults, and a destructive defeat for the advocates of the highest professional training, or whether resort to such a statute will prove to be instrumental in creating higher standards of professional training for all the cults, depends chiefly on the nature of the statute, as to the number and character of the scientific subjects declared therein to be

basic, the examiners to be placed in charge, the effect of the certificates of proficiency granted in such sciences, and whether these examinations and the certificates of proficiency are to be based on a high standard of scholarship without modification to suit any so-called "school" or "system of healing."

The theory of the basic science statute, as I conceive it, may be briefly stated.

1. The examiners must be persons scholastically qualified in a high degree to conduct the examinations, and must *not* be engaged in the practice of the healing arts. This provision, if systematically administered, would in theory give the highest efficiency in determining the knowledge of the applicant in the various subjects in which the examination is conducted, because the examiners would not only be intellectually qualified, but would presumably be able to conduct examinations without being influenced by the alleged prejudice against the claims made for some methods of healing. Under such a system of examinations the devotees of the various cults would be deprived of their stock argument that the examiners are prejudiced against them, and, therefore, do not treat them fairly, with the expected result that they would apply for, and enter, the examinations with a feeling of security that they would be tested alone on their actual merits.

2. The emphasis would be put on demonstration of qualifications by examination and not on study in a college, so that the devotee of the cult would be given security that his actual learning and intellectual power, and not his educational pedigree, would determine his rating as an applicant for a license to practice the healing arts, and he would be freed from the alleged thralldom of mere arbitrary curriculums in the control of persons unfriendly to him or his cult.

3. The applicant for the examination, if he passes it, receives a certificate, which entitles him to credit for possessing enough knowledge to prevent him from being dangerous to the public health, and entitles him to a license to practice the healing arts, if he shall submit himself to and pass the special examination by such particular examiners as have the right under the law to issue licenses to practice generally or in one of the cults. This provision does not, and is not supposed to, put all applicants for licenses

of every kind on a parity as to attainments, regardless of "schools" or "systems of healing," or even to bring about as to these basic sciences a single standard of intellectual qualification. The nonsectarian examiners, and the cult examiners, may impose other examinations, or additional conditions, according to the other statutes under which they act, before admitting the applicant to practice. The basic science statute merely establishes a minimum standard of scientific scholarship to which all applicants for licenses must submit.

4. By this method each cult, while submitting to the strictures of this minimum standard, preserves its right to exist, and to issue its propaganda about its alleged usefulness, and to continue its schools, so that those who are interested, from whatever motive, in keeping the cults going are not antagonized by the basic science statute in their efforts in that respect. Without a certificate of proficiency in the basic sciences a person *is not permitted* to secure a license of any kind, and with such a certificate he *may not* secure a license of any kind, so far as the basic science statute is concerned, for he still must pass the nonsectarian or cult examiners on the basis of their own requirements.

*Examination Overemphasized.* In analyzing the provisions of the basic science statutes that have already been adopted, I am impressed by the controlling emphasis which these statutes place on the *examination*, as the superior and final test of the accuracy and sufficiency of the knowledge possessed by the applicant for a license to practice the healing arts. All of these statutes apparently exclude any emphasis on the training that an applicant has had in any college. In my view there is no method of training that ought to be acceptable except that which is from time to time supplied in good medical schools. It is deemed possible for an applicant, sometimes by accident, sometimes by a system of cramming, to pass an examination, and apparently show a sufficiency of knowledge, without having had the training in the subject that under modern conditions is deemed requisite to protect the public health, and that should reasonably be demanded under modern conditions by the state. It is a mistake to put the emphasis on proof of qualification by examination. The emphasis ought to be put on proof of ac-

tual training, instruction and accomplishment in the laboratory, lecture room and clinic. The framers of the basic science statutes, in placing the emphasis on examinations, have simply yielded to the insistence of the cults on their right to conduct low grade schools of instruction and to compel the recognition of them as sufficient for qualifying physicians for the practice of healing. They have found it impossible to recognize such schools, and have therefore adopted the examination as proof of qualification. The surrender to the cults in the abandonment of proof of many years intensive training, instruction and accomplishment in high grade schools of instruction, and the substitution therefore of an examination of a few hours' duration, is retrogression that ought not to be embodied in the law.

*Object to Counteract Multiple Boards.* It is apparent, from an examination of the theory of the basic science plan, that its object is to supply an antidote for multiple boards of examiners. It *pretends* that there are fundamental sciences which are used by all the cults, that all of the cults seek proficiency in those sciences, that the public good requires at least a certain minimum of proficiency therein, and that all of the cults are willing to submit themselves to disinterested scholarly examiners known to have no prejudice and no ulterior object in view. These pretensions are not well founded in fact. There are many cults that do not make such admissions. Persons who originate cults, or keep them alive, are not actuated by any such motives.

But it may nevertheless be advisable to enact a basic science statute in a state maintaining multiple boards, in order to force the application of reasonable standards of scholarship on cult practitioners—and, of course, that is really the object—for the protection of the public health; but I feel impelled to warn you that we should not expect it to eradicate the worst of the evils of cults. Most of the difficulties that confront us in regulating the practice of the healing arts, on a basis of reasonable educational qualifications, inhere in the ignorance, selfishness and cupidity of certain classes of persons who have no respect for law as a rule of justice, but seek to make it conform to their selfish desires and needs, regardless of the exigencies of the public health. The passage of a basic sci-



ence statute on the assumption that thereafter these persons can be permanently committed to its actual observance, or even to its theoretical acceptance, is to a large extent an attempt to deal fairly with persons on the basis of their really believing that they have substantial grievances, and honest intentions, in the promotion of the public health, whereas they have only the selfish object of setting themselves up in a profitable business with the least possible expense and trouble without regard to the public welfare.

*Seekers for Special Privilege.* No matter what the requirements of law are, or how easily attainable any standard of proficiency required for admission to the enjoyment of its benefits, there are persons seeking its privileges who are not willing or able to qualify to receive them; but such persons desire, nevertheless, to have all of the privileges and benefits of the law to which they do not conform. However meager may be the qualifications required for admission to the enjoyment of the privilege of practicing the occupation of healing the sick, there are always those seeking the right to follow that occupation who are not willing or able to meet the legal requirements, but who, notwithstanding their want of qualification, seek the enjoyment of the benefits conferred by the law on legally authorized practitioners and contrive by one kind of means or another to hold themselves out to the public as doctors.

*Points of Attack in Basic Science Laws.* One does not have to frequent legislative halls long to ascertain that no proposition is admitted by everybody to be basic. Substantially every embodiment of legislation is constantly attacked by somebody. Some minds are utterly lawless and unconforming by nature; and others act only on selfish grounds in refusing to accept propositions regarded as fundamental by most of mankind. These rebellious minds make most of the trouble in efforts to agree on a basic proposition for legislation.

It is not enough to assert, even by legislative enactment, that all practice, both nonsectarian and cult, is based on fundamental sciences, because some cults maintain, and will continue to maintain after the passage of any basic science statute, that the dogmas of their particular cult may be administered without knowledge of the sciences called basic.

*Denial of Essentials.* For instance the chiropractor not only denies that diagnosis is necessary, but denies that any one of the so-called basic sciences is necessary, and asserts that his peculiar manipulation of the spinal column is pertinent to the conditions created by every disease, and that, therefore, there is no need of knowing anything about the disease with which any patient is afflicted. The passage of a basic science statute will not change the mind of a chiropractor! He will continue to conduct his practice in violation of the basic science law, as he has done in violation of all the other laws; and he will continue to haunt legislative halls to procure amendments to all of the statutes, whatever you may call them, and whatever may be their propriety, allowing him to go along in his practice with the kind of information that he happens to have.

*Objectors to Any Restrictions.* In other words, there will be the same assault on the basic science law by quacks that has heretofore been made on every other law that has for its object the maintenance of definite standards. The question will always be with us: What sciences are basic? The contention will always be with us that most of them are not. If it were now possible to secure unanimity among all of the practitioners of healing on the proposition that certain sciences are basic, this unanimity would not last long, because somebody, not having the ability to make himself proficient in the sciences declared to be basic, would come forward and urge that the maintenance of such standards is oppressive to him and his patients; and that he ought to have the right to conduct his own practice in his own way, so long as his patient is satisfied; and that there should be no interference between him and his patient by the state; a proposition that is denounced by everybody who knows anything about the maintenance of public health, but which will always find acceptance by somebody having the authority to participate in legislative enactments.

*Selection of Examiners.* The examiners are probably the most important element in the scheme embodied in the basic science statute. Cults, and the teachers in their schools, have from the beginning charged that the examiners of the nonsectarian boards have dealt unfairly with their applicants and purposely prevented

them from passing their examinations. There is no foundation for any such charge. Their applicants manifestly to a large extent have not had the educational qualifications necessary to enable them to pass reasonable examinations. Nevertheless, since the examiners are chiefly doctors of medicine from the more famous medical schools, many legislators have been induced to harbor doubts as to their disinterestedness. Hence we see this wise attempt by the formulators of the basic science statutes to get examiners manifestly destined to be impartial in the absurd controversies that have been developed.

Minnesota provides that two of the examiners shall be full-time paid professors appointed by or under the authority of the University of Minnesota, and that another shall be a doctor of medicine and surgery, another a doctor of osteopathy, and another a doctor of chiropractic. This classification of examiners simply establishes the composite board that we have known for a long time, with all of its defects, and particularly with its express recognition of a legal status for cults, and carries into the basic science law the worst of the evils for the eradication of which the basic science statute has been proposed.

Nebraska provides that no examiner shall be a person licensed to practice the healing arts or any branch thereof. While this provision may obviate every basis for the charge of prejudice, it removes the whole examining system from the administration of the persons who know most about the doctor's need for, and his application of, the knowledge of the various basic sciences. This type of examiners certainly removes the practical professional touch from the examinations, and substitutes the mere scholasticism of pure science. The effect of such a revolution in physicians' examinations cannot be definitely foretold, but may be imagined.

Washington provides for the appointment of five persons, learned in the particular basic sciences, from the faculty of the University of Washington and the Washington State College, and probably has made the best provision for establishing the examination on a purely scientific basis, separate and apart from any dogma.

*Subjects Named as "Basic Sciences."* The Wisconsin law names anatomy, physiology,

pathology and diagnosis as basic sciences. The Minnesota statute names these and adds bacteriology, hygiene and chemistry. The Nebraska law follows Minnesota. Washington follows Nebraska's list, but excepting bacteriology. The action of these four states in determining what subjects are fundamental indicates the difficulty, if not the impossibility, of agreeing on the first requisite of the basic science statute. But that is only one difficulty in a bad situation. It is apparent that no one of these states has listed all of the subjects that are really basic in the preparation of the student for the work of the physician. None of these states includes obstetrics, which will hardly be denied a place among the basic subjects. Neither does any one of them include even the most elementary phases of surgery, such as setting a bone, or doing any one of a score of things necessary to be done by every physician in general practice from day to day. Nor does any one of the states include poisons or their antidotes, or contagious diseases, unless they are meant to be coralled under hygiene or chemistry, or another of the subjects capable of extension indefinitely to include everything.

*Recognizing Cults.* The Nebraska law provides for separate licenses for persons practicing medicine and surgery, persons practicing osteopathy, and persons practicing chiropractic, a scheme which not only tolerates but legislatively creates cults, and not only tolerates and creates them, but provides for unequal professional training among them.

Nor does Washington do any better, since it provides that the examiner shall conduct "examinations of all persons applying for licenses or certificates for practicing medicine and surgery, osteopathy, osteopathy and surgery, chiropractic or drugless therapeutics," thus not only recognizing cults, but establishing a legal classification of them that is probably the worst that has ever been contrived.

*Cults Seek Commercial Success.* If a basic science statute requires that a cult physician have sufficient knowledge of certain sciences to safeguard the public from the dangers of allowing uneducated physicians to practice—a supposition that we have to make in order to give a material reason for passing the basic science statute—we may ask why any other examination



should be required by examiners representing a particular cult. For illustration, in the case of an applicant, under the basic science statute, who seeks admission to the chiropractic cult, any additional requirement by the examiners of that cult would not be material in the interest of the public health; so, therefore, might we not omit it, so far as any requirement of law is concerned?

The necessary answer is interesting to contemplate. The additional appearance before the chiropractic examiners is insisted on by the proprietors of the chiropractic schools in order to keep the cult going and the students coming. I dare say that if there was no profit in conducting the schools of the cults, the cults would languish and die, all appeals for legislation in their behalf would cease, and a single standard of intellectual proficiency would be unopposed. In other words, the strength of a cult is not in any new idea possessed by its originators or devotees, but in the commercial success of the schools that make money out of it.

*Hold to Fundamental Principles.* It is my view that the basic science statutes thus far passed are not strongly indicative of sure tendencies in the direction of better conditions for conserving the public health.

I admit that the condition created in a state by multiple boards is intolerable, and that every method that will ameliorate it ought to be carefully studied and, if possible, adopted. But when a new method of accomplishing this thing is suggested, it is important to consider carefully whether the new method will actually produce an improved condition, or whether, in the long run, it will simply fasten the vices of the cults on us more firmly and more definitely. It is not wise to abandon fundamental principles for what seems an immediate improvement, if the improvement can be but temporary, and if in the long run the expedient adopted will but weaken the public demand for the best service by the most carefully educated physicians. Rather than accept the examination, for instance, as the only test of training and instruction, or accept only a few of the necessary sciences as basic, with the consequent abandonment of proof of knowledge in many other subjects that are of the highest importance in considerations of public health, is it not far better for the educated physicians of the country, instead of compromising eternal

principles of justice and efficiency, to stand by those principles and, if necessary, go down in defeat in warfare with the quack, and stay in defeat until the people wake up to the true conditions that confront them, and finally, as they always will, come to the acceptance of the principle that is fundamental, and that will supply the relief that evil conditions demand? I think so.

While I am willing to make the experiment of promoting basic science statutes in those states that have multiple boards, I am not willing to consent to a basic science statute that ignores the fundamental principles for supplying educated physicians to the country, or that yields our insistence on their importance merely to avoid a controversy with the cults. The penalty of such a compromise with the cults is too great to be willingly borne. It seems to me that thus far the best of the basic science statutes is merely a feeble step in the direction of forcing the cults to require some more or less inconsequential additional knowledge in a few subjects with the possible effect of deluding the public into the thought that having passed the basic science examination, the physicians produced by the cults are as good as any other physicians because they bear the stamp of legal approval. Is this not a complete capitulation to the cults on basic principles that ought not to be surrendered? In passing such a basic statute are we not paying too high a price for the appearance of having made somewhat better physicians out of persons who have no right to the physician's status in the law or in the judgment of the community? These questions indicate to me the line of thought that ought to be directed toward the present movement for basic science statutes as a scheme for ameliorating the vast evils of the present wrongful recognition of the cults by law.

*Single Standard of Professional Training for All Healers.* All of the present statutory incongruities and evils in licensing physicians could be avoided by the simple legal requirement that all healers be educated under the same standards of proficiency, and that there could be no *special privilege* given to the followers of any cult to practice healing on exemptions from this single standard of reasonable professional training. Under such a system there would be no

cults, because the selfish reason for them would be gone, and all doctors holding themselves out to the public would place the emphasis on diagnosis, and out of the world's category of therapeutic agents would cause to be applied to each particular disease that curative agent possessing the best remedial possibilities. This happy condition the people are entitled to reclaim by the enactment of statutes in conformity with the facts of life and the principles of reason.

*Safeguards Against Unqualified Needed.* Long observation has convinced me that the principal obstacle to adoption of wholesome laws requiring all practitioners of healing the sick to be equally qualified before engaging in their occupation is the fact that throughout the country thousands of persons are following this profession without suitable preparation for it, some of them in conformity with existing statutes, but most of them in contravention of them. Not having made any reasonable effort to qualify themselves, they know that they could not continue to receive emoluments from their practice, and make their living out of it, if they were compelled to show possession of even elementary qualifications. Hence they oppose a uniform legal standard of reasonable educational requirements for all doctors.

Such persons could receive no credence from the people, or from legislators, if they should disclose the ignoble reason for their opposition to wholesome laws, because both the people and their legislators naturally favor the restriction of the practice of healing to persons properly qualified to perform that service. Therefore, these unprepared healers conspire to conceal the real questions from the people, to set up false issues, and to lead legislators away from fundamental principles to invented scandal, fraudulent misrepresentation and false theories of both law and medicine.

Following the legislative program of making the worse appear the better reason, concealing the fact that their opposition to wholesome legislation is in reality based on their own deficiencies, they strive to appear to be honestly placing their opposition on worthy grounds. They pretend to be devoted to the public welfare, to justice and to progressive development of science.

These pretensions are made to conceal the real

object, which is to maintain inferior legal standards of educational requirements as a special privilege to persons not willing or able to comply with reasonable standards, or to proprietors of inferior schools bidding for unprepared students, unequipped to teach the subjects of a proper course in healing the sick or to compete with good schools in giving the same courses of study.

The untutored healers succeeding financially in passing themselves off to the people are numerous. All of them are opponents of reasonable educational standards. Their own numbers are augmented by numerous persons who for one reason or another champion their alleged cause, deluded patients, dealers in proprietary medicines and their beneficiaries, opponents of vaccination, of vivisection and of inoculation, fakers, quacks, founders of new kinds of propaganda and organizers of new cults. They fight together to retain their profitable ventures, feeling that they have a common cause.

*Opposition From Mercenary Self-Seekers.* The most active opponents are the proprietors of the low grade cult schools which assume to make doctors out of ignorant persons in a few months. These schools are bonanzas. They gather in armies of students who pay high tuition fees. They turn out armies of graduates for whom places to ply their frauds profitably must be provided in order to keep new students coming. A reasonable standard of educational requirements would kill these geese that lay golden eggs. Their only attraction is the speed with which they convert ignoramus into doctors without bothering them about studying diseases or the methods of curing them. These schools can stay alive only under laws that make it possible for their graduates to hold themselves out to heal the sick without having even elementary scientific knowledge of the human body. The proprietors of such schools, therefore, are the more strenuous opponents of a reasonable single legal standard of educational qualifications for all persons holding themselves out as engaged in healing diseases.

Joined together firmly in an organization for promoting their selfish purposes, exaggerating their voting strength and proclaiming their disposition to use it, misrepresenting their educational qualifications and their ability to heal the



sick, and deriding educated physicians by venomous and prejudicial scandal, all of these opponents, unmolested by organized opposition from any source, persistently and continuously use every known influence to defeat proposed legislation for erecting reasonable standards of professional training. As long as they are unopposed or weakly opposed they will succeed; when properly opposed their selfishness and weakness will be made known and in the long run they will fail.

#### NEED FOR ORGANIZATION IN THE MEDICAL PROFESSION

Those who have the public health in view and want to succeed in this contest will have to make a more vigorous fight. They must organize to educate the people and to inform legislators. They must spend their time and money more freely in presenting the public's cause to the legislatures of the country, and, indeed, to the courts, too, which also require ample arguments on the cases before them. The persistent, the vigilant, the crusading men win. It is unfortunate that truth has to be thus enforced, and that it is not self-evident. But error propagated by money, enthusiasm, and a not too scrupulous regard for facts often—in some fields generally—overcomes truth which, thus crushed to earth only after a long period of time will rise again. Those who would give the public better laws, if they would succeed must not be content with merely stating their case scholastically, but they must organize to propagate it and then enforce it and compel attention to it by the practical methods everywhere influential with men, not only today, but tomorrow, and year after year, until the truth is permanently embodied in the law as the settled policy of the state.

#### DISCUSSION

Dr. Harold Rypins, Albany: This is the best paper on the subject of basic science laws that I have ever heard or ever expect to hear. I feel that this is without doubt the most important, practical subject before this Federation today.

In order to bring the matter to a practical focus, assuming that we are still in business session, I should like to move that the secretary be instructed to send a copy of this address immediately to the health officers, to the officers of the medical societies and to the medical boards of Michigan, Arkansas and Kansas, and any other states where basic science laws are at present pending, with the vote of this Federation that this

paper expresses the sentiment of this Federation in reference to such laws.

Dr. T. J. Crowe, Dallas: I second that motion.

Dr. Charles B. Pinkham, San Francisco: May I ask that California be included?

Dr. T. J. Crowe: In seconding the motion I want to say: "A multiple standard is no standard at all." Let us have a single standard, as Mr. Kelly suggested. The sooner we get it the better. You all know it does not make any difference what kind of license certificate one gets, sooner or later he is going to practice all kinds of medicine. He is going to use electricity, and he is going to use narcotics, and he is going to write whisky prescriptions; he is going to go all down the line. Who is going to stop him? There are not enough men in the United States Army to follow these fellows up and keep them from doing it; it is impossible, absolutely impossible. It cannot be done.

Dr. Frances Dickinson, Chicago: In 1898 I was associated with the medical practice act in the state of Illinois as it was being framed in the legislature. At that time there were three cults outside of our regular profession. We could do nothing with them at all, until finally I suggested there be no collection of fees for any practice whatsoever unless they held a certificate of attendance on recognized basic studies of anatomy and physiology such as taught in the regular medical schools. Of course I lost out.

I want to know from Mr. Kelly whether there is any law against a second proposition, after they have these basic ideas of their not collecting any fee they have that certificate.

Dr. H. J. Lehnhoff, Lincoln, Neb.: Nebraska, as you know, is one of the states that enacted the basic science law, and we people from Nebraska are not disappointed in that law, not in the least. We, as well as the whole profession, are still standing behind that law.

The matter of multiplicity of boards is not a nice thing to have but that condition has come in as it has in a majority of states and it must be met. The single board idea is the ideal. Although we recognize that fact and are holding it before us, it will take time to achieve it.

One of the steps toward a single board is embodied in the basic science law. Mr. Kelly made the statement that the basic science law created cults. It is not the case in Nebraska. Those cults were created, and lawfully created in spite of us long before the basic science law came in.

What are the basic sciences? I do not agree with Mr. Kelly on that proposition, if I understood him correctly. While it is not fully recognized just exactly what the basic sciences are, states that have incorporated the basic sciences in the law have not included surgery or medicine, and, as I recall, none of them included obstetrics. The basic sciences are pretty well recognized and agreed on.

We do know in Nebraska that we have accomplished the result for which we aimed and that is we are

going to raise the general requirements of those practicing the healing arts, or we are not going to have any more practicing the healing arts except in the regular schools. Whenever men become capable of passing the basic science board, then should they be recognized. We are still for the basic science law in Nebraska.

Dr. A. T. McCormack, Louisville, Ky.: I am reminded of a clinical experience by an original cultist down in Kentucky a good many years ago. I think it will help to solve a very delicate situation in the interest of state relations.

We had a man start the practice of medicine, before there was any law at all, because he had found an old family medicine book. He started out in practice. His first patient happened to be a carpenter who had typhoid fever. The carpenter wanted to drink a half gallon of buttermilk. He told him he could not do it; it would kill him. He went to the half gallon bucket and drank the buttermilk, and had no more fever and got well. The doctor wrote in his notebook, "Buttermilk good for typhoid fever. Dose one-half gallon."

Three or four days later a blacksmith had typhoid fever, and he gave him one-half gallon of buttermilk and the blacksmith promptly died. In his notebook he had already said, "Buttermilk good for typhoid," so he just added, "Good for carpenters; hell on blacksmiths."

I think it is pretty apparent that in the peculiar manifestation of the case that exists in certain of our states, due to conditions with which we cannot be as familiar as their own representatives, they have found the best treatment was one-half gallon of buttermilk, and have lived in spite of it. As long as that is the case, and the patient seems to be all right, as far as I am concerned I am going to let him stay that way. But I do not believe we ought to adopt their empiric remedy as a universal remedy on the insufficient evidence that has been presented of its efficacy during infancy and childhood.

Permit me to digress. What I say will be as irrelevant as was the discussion in the matter of the last paper when our distinguished general manager got into the discussion of that question an utterly extraneous matter. Most of you did not understand that I was the target of his gentle irony. This was because I had the duty and obligation very recently of appearing before a committee of Congress in support of the Newton bill for the extension of the life of the Sheppard-Towner Act. My reason for digression is I want to make clear, and help to cure a fixed delusion that has existed on the part of many of my professional confrères for a good long time.

Dr. West expressed the thought that it was astonishing that a man who was interested in the general practitioners of medicine of the country would have appeared in Congress as favoring the practice of public health and medicine by one wholly unqualified to practice that science. That statement has been made

so repeatedly that many members of the profession all over the country think that is true.

I want to call your attention to two or three facts in the text. Under the Sheppard-Towner Law it is provided in section 4 that "in order to secure the benefits of the appropriation authorized in this act, any state, through the legislative authority thereof, accept the provisions of this act and designate or authorize the creation of a state agency with which the children's bureau shall have all the necessary powers to cooperate as herein provided in the administration of the provisions of this act; provided, that in any state having a child welfare or child hygiene division in its state health agency, the said state agency of health shall administer the provisions of this act through such divisions."

The allegation has been made so frequently that the provisions of the Sheppard-Towner Act are made effective through lay control, that a great many doctors and the leader of our profession believe that that is a statement of fact. There has not been one single, solitary activity under the Sheppard-Towner Act in its seven years that has not originated from a state department of health, submitted to and approved by the federal board created by law as consonant with the purposes of the act.

No two states have presented the same program. It has been a diversified program fitted to the state. But it has been under the active control of the state health department, and every activity has been done under the supervision of a doctor. In the hearing before Congress there was not one single, solitary criticism of a single, solitary activity from a single state.

Forty-five states out of the forty-eight have accepted its provisions and are using its funds. What I want to get before the profession is that I resent to the very core there being any insinuation or statement that at any time, anywhere, I have been false to the profession to which I have given my life, the inheritance of the love for which, and to which, is the deepest feeling in my being.

But along with my father, who was a doctor, I also had a mother, and so did all of you, and so does all the world, and in this country of ours we have a higher death rate amongst our mothers and our babies than our knowledge today should permit. We are having unnecessary and needless deaths, ruthless deaths.

Whenever my profession appears before the Congress of the United States and the legislatures of the several states with a constructive program that is better than the one that has been presented through the children's bureau, I am ready to favor it. But as long as we are merely critical, as long as we are merely leading blind opposition by statements that have no basis in fact, we cannot hope to win either the respect or the confidence of the Congress or of the public.

Dr. P. H. Bartholomew, Lincoln, Neb.: I should like to correct an error that crept into Mr. Kelly's paper. As I understood it, the statement was made that a chiropractor could be licensed in Nebraska with-



out going before the basic science board. The law provides that no one can secure a license to practice any of the healing arts without a certificate of ability from the basic science board.

With relation to the question of the type of members we have on our basic science board to give an examination, I should like to repeat a short conversation that I had with one of the members. He is not a doctor. He has a master's degree from a recognized, high type university in this country. Other members on that board have their doctor's degree. There are a few of them, I believe, that are M. D.'s.

This particular individual had access to carefully examine the questions submitted to graduates in medicine, for the purpose of ascertaining whether they were competent to practice medicine in certain localities. He stated to me that it was quite an easy examination to pass in comparison with what was asked in his subject by the basic science board. It seems to me it is a question of just how the thing is handled. The chiropractors have not passed the basic science board in Nebraska since the law became effective.

I should like to heartily agree with Mr. Kelly with reference to having a single board, where that is practicable; it is not as yet practicable in our state. I should like to agree with the position taken, that we ought to stand pat for our high ideals and go down in defeat, if necessary. But in order to stand pat we must have cooperation; we must have the backing of the entire section of the country that is really interested in public health, and we all are, if it is brought to our attention. I should like to ask how we may organize that group so that we will not have to go down in defeat.

Dr. Burton D. Myers, Bloomington, Ind.: I want to be perfectly clear that I understand Mr. Kelly rightly on one matter. As I understand him, he feels that we have made a mistake, or that there has been a mistake made in being a bit too specific as to what constitute the basic sciences. I think I understood him to make such a statement. Of course, what we want is to have the basic sciences in effect. Cannot that be accomplished by requiring for entrance on the study of medicine, two years of collegiate work, and leave it at that? And then for entrance on the clinical examination, the examination of everybody in the preclinical subjects alike, the subjects of the first two years of medical course. Then leave it to these people who have some special view as to therapy, to take their special examination in that special thing after they have fulfilled the preliminary two years of collegiate work requirement, and the examination in the preclinical subjects.

That is the way our Indiana board has solved the problem, and we feel that we have done fairly well in it.

Dr. Harold Rypins: May I ask my friend from Nebraska a question through you? I am not quite sure whether I understood correctly, but I thought I heard you say that in one or more of the states where there

is a basic science law the subjects included in the basic sciences also included medicine and surgery.

Dr. H. J. Lehnhoff: No, I thought there was a question in Mr. Kelly's mind, and he mentioned surgery as basic science.

Dr. Harold Rypins: As I understand it, there is no state with the basic science law which includes any clinical subject.

Mr. Harry Eugene Kelly: In the first place, I have no quarrel with anybody who has a difference of opinion with me. I am in a profession that is dealing with differences of opinion all the time, and if we did not have them, I should be out of part of my job.

With respect to the lawyer that my friend mentioned, I will say that I do not hold a brief for all the lawyers in the country. A good many of them do not satisfy me any more than some of the cults do. I am an old battle-scarred veteran in this business of looking after the doctors' interest and the interest of public health before legislative bodies. I have done that in the legislatures of two states.

What I have said about the cults, not only here but in a little book that I have written on the subject, published by the American Medical Association, I have ascertained from my actual experience before legislative committees. I know what the chiropractors, for instance, advocate. I do not look at their books. That is not the place to find it. I hear what they say to the legislatures. I represent them in this paper on the basis of what they say there.

I am not quarreling with any attempt to establish a basic science law in a state where conditions are as intolerable as they always are in states having multiple boards. I think there is a stroke of genius in the idea of trying to undercut that situation by a basic science law framed in the right way. But I am complaining about some particular basic science statutes because they do not fulfill their mission.

For instance, if one can get a basic science statute requiring all applicants for licenses from the cults to acquire information that otherwise they would not have, one may help the public somewhat. I am not complaining about trying that. We have made many experiments, and it may be well to make that one.

I was analyzing some of these laws, trying to show the objection to particular statutes. On the basis of these particular statutes, I am not looking for very much improvement. In the first place, they contain too many exceptions. They contain too many of the marks of the chiropractor and the other cults. It seems to me possible to draw, but I do not think it is possible to pass in any state where there is a strong cult opposition, a bill that would provide for scientific examination in certain basic subjects. If one can get an act of that sort, it might do good in a state which has a multiple board. I should not think of trying it anywhere else. I think it is a mistake to try it anywhere else. Any system is better that has one board.

As to what sciences are basic, you gentlemen know more about that than I do. I am not so foolish as

to declare arbitrarily to medical men what sciences are basic in their profession. I leave that to you. But I thought, in looking over the list, that there are very few considered basic. I have had a liberal arts college training, and have studied some of these sciences myself, and it looks to me as though some of the things very important, and apparently basic, are not required by any of these statutes. Therefore, I make mention of that fact. It seems to me that the list ought to be enlarged as much as possible, not restricted as much as possible.

With regard to creating cults, I was misunderstood. I did not say in my paper that a basic science act properly formulated necessarily creates cults. I think that some of the acts do not improve the cult situation any, but simply accentuate the cult demarcation. A basic science law would not necessarily create cults where there were none. I think that the basic science law ought to be applied in its purity only where the cults have gained such ascendancy that the public health is in danger.

Then there is the question, as a matter of expediency, as to whether it would be a wise thing to pass the basic science law if there were a possibility of converting the public, and there is always such a possibility, to a better system of regulation. Of course, that is a manner of expediency.

With regard to the question the gentleman asked about making these basic sciences specific. I was not making any point on that. They would have to be made specific, as I understand it—very specific. My point was that not enough of the subjects, according to my view, were in the laws as basic. But of course, that is a matter of trading, I know, in the legislative assembly; and more basic sciences may be put into the laws as they are amended.

Dr. Henry Albert, Des Moines, Iowa: I should like to ask Mr. Kelly if in his judgment it would be possible to pass a law in any state which would require the applicants for basic science examinations first to take the courses of study in a proper school of medicine, or, we will say, in a university, a standard university. Do you think it would be possible to pass a law of that kind?

Mr. Harry Eugene Kelly: I realized the great difficulty in that. We have had that trouble, of course, in all the states that I know anything about. In some states they have been able to maintain a good medical school standard; in some they have not. It depends a good deal on the public sentiment in the state. If one cannot do it (and I realize that sometimes it cannot be done) the next best thing would be to come to the examination, although it is not the best yardstick by which to measure accomplishments that we regard as necessary in a physician.—*Federation Bulletin*, July, 1929.

111 W. Monroe St.

## THE COUNTY MEDICAL SOCIETY\*

ANDY HALL, M. D.

Director State Department of Public Health  
Ex-Secretary Jefferson County Medical Society

MOUNT VERNON, ILL.

The County Medical Society is the most important of all the component societies. It is most important because it reaches more physicians, reaches them more often, and supplies the most potent factor in influencing their professional careers.

*Number in attendance.* The American Medical Association meets only once a year and it is not attended by more than one physician out of twenty-five. The State Medical Society meets only once a year and it is not attended by more than one out of twelve physicians. But the average live county society will meet at least six times a year with one out of two physicians in attendance. Hence the importance of a good county society, and the problem is to keep the society alive, in good health and properly functioning.

As one who has spent more than half of his professional life as an active officer in his county, district and state medical societies, I have reached a few definite conclusions concerning the things necessary to emphasize in order to keep an organization alive and active, and about some of the duties it should perform.

*Reasons for attending.* There are only a few reasons why a busy physician will close his office, leave his home and family and spend a few hours attending a medical society or any other gathering:

1. If he can add to his store of medical knowledge something that will enable him to be a better physician and do more for his patrons and thereby reap a greater remuneration for his services, he will attend.

2. If he can derive some amusement or social enjoyment he may attend.

3. If he feels that he may thereby meet certain obligations which he owes to his fellow physicians, his profession, the community in which he lives, his state and his Nation, he may attend.

*Character of Program.* To meet the first of these requirements it is necessary always to have

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a good, practical, scientific program, and this is possible in every county society. Most county societies have an ample number of able members, who if they will, can prepare and deliver a valuable discourse on some medical subject. But if they have not the self-confidence and are unwilling to do this, there are many able men living within a radius of forty or fifty miles who would be only too glad to attend and furnish a program, provided they have an audience of sufficient numbers to justify their efforts. Or, if the Secretary will call on the Scientific Committee of the Illinois State Medical Society this committee will send a speaker of unquestioned ability capable of discussing any subject they may select.

*How to kill a Society.* One of the best methods to kill your county society is to have a few meetings and disappoint your members with an inadequate, worthless program. They will become disgusted and feel like their time is more valuable at home and your next meeting many of them will remain at home.

*Review of Medical Literature.* A program should be devoted once or twice every year to a review of medical literature on the new things in medicine. One member should be selected to report on internal medicine, while others should be chosen to report on surgery, urology, obstetrics, and various other subjects in which the society is interested. A program of this kind is interesting, instructive and beneficial. It keeps the profession from getting into a rut, broadens their viewpoint and keeps them abreast with the progress of medical science.

*Social side of Program.* The second requirement should never be neglected in any medical society. Not only should you have a good scientific program, but after the paper or lecture has been freely discussed, do not dismiss your physicians and vacate the room, but have the meeting followed with a little buffet lunch, if it is only a cup of coffee, a sandwich and a doughnut. But linger longer, meet, greet and spend a social time with the visiting physicians. It will make them feel more welcome, they will feel more kindly towards each other and will be anxious to return again to your next meeting.

*Favorable time for Meeting. Noon or Evening.* Some of the best societies in the State have a luncheon at the noon hour followed by

the scientific program. Others meet at the dinner hour in the evening, and this is followed by a scientific program. The evening, I think, is the preferable time for a medical meeting. The attendance is better and you will have more time for a liberal discussion. The discussion is an important matter, as it usually brings out and emphasizes the things that should be understood and remembered. It is a good idea to have one or two designated to lead off with the discussion. They will then study the subject and will often bring out important facts that the essayist did not mention.

*Secretary's Responsibility.* Leaving aside both of these requirements, as well as the third concerning which I shall speak in a moment, it is often said that the life and activity of the county society depends upon its Secretary. This in a measure is true. The Secretary should be active, not afraid to use printer's ink, and he should be a diplomat. He should always be able to arrange for a good scientific program. Then he should not hesitate to advertise it. Furthermore, he should not limit invitations to his particular society members, but invite physicians from the adjoining counties and he will oftentimes be surprised at the number who will drive 40, 50 or 60 miles to attend the meetings.

*Invitations not limited to members.* In my county, with a membership of less than thirty, I sent out ninety invitations for our March meeting, and the result was more than fifty physicians in attendance. It has been my custom always to send each member a letter with a 2-cent stamp on it, and not a postal card. When possible, I have given the program to the local papers as a news item a few days before the meeting. Then the day of the meeting I have instructed the office girl to call up each member over the phone and remind him of the meeting.

*Secretary and President.* While a good Secretary is a very important factor for a live county medical society, the President is also an important member of the organization. I have often seen a good scientific program with a goodly number of physicians in attendance, spoiled by an incompetent president, who did not have sufficient tact to make the visitors feel welcome, nor did he have sufficient diplomacy to call out the attending men who were capable of discussing a scientific paper.

It is better to have several short discussions of a paper than to permit one man who has nothing to say that is worth saying to consume the evening in a rambling talk.

*Obligations of physicians.* The third requirement is often too lightly regarded, at least, so far as the county society and its activities are concerned. All physicians have deep and sacred obligations to society which extend far beyond the narrow limits of treating the sick and ailing. Expensive as it is, the cost of an education to the individual who receives an M. D. degree is far below the actual cost of providing the talent and facilities of instruction.

#### WHAT THE PUBLIC IS DOING FOR MEDICAL EDUCATION

*Appropriations by the Legislature.* The other day the legislature appropriated over \$12,000,000 to the State University for its use during the next two years. No inconsiderable part of that enormous sum is for the college of medicine.

*Gifts by private citizens.* Mrs. Montgomery Ward gave \$1,000,000 in one donation to the medical college of Northwestern University not long ago. John D. Rockefeller has actually forgotten the number of millions of dollars which he has turned over to the cause of medical education throughout the world. Scores of other wealthy individuals have contributed many millions of dollars toward medical education. The individual who accepts the benefits thus provided must therefore share in the responsibilities implied and they constitute a very real obligation to the public. The county society is the most practical agency through which the individuals who make up the medical profession may discharge their obligations and duties to their communities and fellow beings in a large and satisfactory way. This will necessitate the study of public health problems, the formation of public health policies and programs and the activity of the society in public health projects.

*Physicians' opportunity to contribute.* Every physician who has been permitted to drink freely from the wonderful fountain of medical knowledge should feel it his duty to contribute something to that fountain of knowledge himself. This he can best do by becoming an active member of his county society, meet with his fellow physicians and tell them of his success and his

failures in order that they may profit by his experience.

*Physicians give for the sake of giving.* The man who has acquired a superior knowledge of medicine or surgery, but is using his accomplishments for no better purpose than to make all the money possible out of it, is not the highest type of a physician. But it is the man who is successful in his profession who is willing to affiliate with his county society and by instructive teaching do what he can to raise the standard of his profession and become a benefactor to his community.

*Sanitation, prevention, hygiene.* The public health matters that now hold a strong and growing popular interest relate especially to sanitation, prevention of communicable diseases, correction of physical defects implying periodic health examinations and to hygiene.

*Air and water.* Next to the air we breathe, for example, pure water is the most essential thing for the continuance of human life. It is significant, therefore, to know that in this State most of us depend on surface water for supply. With hundreds of villages and cities pouring their untreated sewage into streams from which their neighbors lower down necessarily take their drinking water we have some real problems. Doctors ought to be familiar with these problems.

*Number of cases and deaths in 1928.* With reference to communicable diseases the magnitude of the problem is suggested by the fact that a total of 968 cases of typhoid occurred in Illinois last year with 160 deaths; 1,663 cases of smallpox with 5 deaths; 7,107 cases of diphtheria with 647 deaths. A rather overwhelming assertion is that 20 per cent. of the great volume of insanity in Illinois is due to syphilis. A very pathetic fact is that one out of every two men you meet is handicapped with some physical ailment or physical defect, although 60 per cent. of the volume could have been prevented or could be corrected. These things suggest the nature and magnitude of obligations which physicians owe to their fellow men and to the communities in which they live and the medical profession can neither sidestep nor escape them. This the public is beginning to understand clearly.

*The educational and scientific committees of*



*the Illinois State Medical Society, and the State Department of Public Health* are doing their duty to educate the public and the physicians in the conservation of health. You can draw freely from the talent commanded by each to participate in your programs and meetings. But these agencies can not reach the goal they should reach unless they have the full cooperation of the county societies. You must use the talent they provide and you must enthusiastically support the projects they initiate. You must carry out enterprises of your own.

*What County Medical Society is expected to do.* There are many things that the members of a county medical society can do, should do, and are expected by the public to do, for the good of their communities. They should not only be the advisers but should assume leadership in all matters pertaining to the public sanitary measures. They should disseminate knowledge needful to a clear understanding of the cause, prevention and cure of various diseases. They should be active in measures necessary for correction of the physical defects and ailments of children, in order that they may not be handicapped throughout life and become a burden to the community, state and nation.

Sickness and death are no longer looked upon as a private personal matter that concerns only the patient and the physician. The public is taking an interest in the conservation of health and life and unless the medical profession assumes leadership in these measures they will soon be riding in the rear seat and be embarrassed and humiliated by seeing laymen at the steering wheel.

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## THE ATTITUDE OF THE PRESENT DAY MEDICAL SCHOOL IN THE MATTER OF THE EDUCATION OF THE YOUNG DOCTOR\*

LOUIS D. MOORHEAD

Dean, Loyola University School of Medicine  
CHICAGO

The graduate of a medical school is the product of a system of education. He represents the end result of a number of influences to which he has been subject during four years in the medical school and a fifth year in an approved

hospital. Does the candidate who presents himself today for entrance into the practice of medicine meet the ideals of the medical profession and the needs for which it was created and which exist today? These are the questions for the serious consideration of which you are assembled here this morning. Our method of approach to the study of this problem is through "the attitude of the present day medical school in the matter of the education of the young doctor."

A brief review of the evolution of medical education in the United States will serve many purposes. First of all, it will reveal to us the relation of the medical profession, both collectively and individually, to medical education in the different periods of its existence. It will show us also the influence that the medical profession exerts or has exerted at different times in the education of the young doctor. Lastly, it will indicate to us the tendency of medical education so that each of us may draw our own conclusions as to our satisfaction or dissatisfaction, approval or disapproval.

The old preceptorship method is the oldest of our American systems of medical education. The young man desiring to embrace the vocation of medicine chose his ideal physician as preceptor. This man, necessarily a general practitioner, after passing upon the general fitness of the candidate, took him under his tutelage, directed his reading, supervised his necessarily crude dissections and experiments and, finally, through council and association, directed his footsteps along the path of the art and some of the science of medicine.

Next came the proprietary medical school. In various centers groups of medical men banded themselves together and organized medical schools in an endeavor to systematize and improve the education of the physician. At first these schools supplemented the work of the preceptor and finally, as the courses expanded, displaced entirely the work of the preceptor. In the early days of the proprietary school there was no sequence in courses, there was no differentiation in classes and the term of service was brief. Gradually, following the lines of other educational systems, organization and pedagogic principles began to make themselves felt. Already in the ranks of the faculty, and rightly so, specialization in the practice of medicine was

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\*Read before Secretaries Conference at Annual Meeting of Illinois State Medical Society, May 21, 1929, at Peoria.

making its appearance. But always up to the present had the education of the young physician been in the hands of and under the immediate direction of the medical profession. There were many shortcomings in medical education at that time. There was no adequate preliminary education of the candidate, his curriculum was incomplete, surely his courses in the many branches could not be best taught and satisfactorily supervised by men busily engaged in the practice of medicine.

The medical school affiliated with a university represents the next forward step in the American system. Surely this type of school contributed much towards advancing the education of the young doctor. Definite preliminary educational requirements were ordained. Systematized curricula with proper sequences came into being. Preclinical courses were taught by specialists in the preclinical fields. State Boards of Licensure had been established in many states and their influence for good was being felt. About this time came the first survey of medical education by the Carnegie Foundation. The effects of the publication of this report were far-reaching. The proprietary school soon disappeared. The medical school as an integral part of the University became the thing. The cost of medical education grew by leaps and bounds. The medical school ceased to be a dividend declaring corporation and became a liability with a large annual deficit. So then were the affiliated schools gradually absorbed until they became Medical departments of the University.

Medical education has come more and more under the direction of educators. Its relation to the medical profession has changed. Physicians are the clinical teachers of today. The preclinical sciences are turned over entirely to the specialists in the fundamental sciences. Specialism is developed in the clinical branches and even here the influence of the research man is being felt more and more every day.

As our system now stands the individual medical school has but little to say concerning the organization of its curriculum or the distribution of the students' time. Requirements set out by the different associations and authoritative bodies specify these.

Extremes, within certain recognized limits referred to above, are found in the medical

schools of today. The influence of the medical profession—the doctor—is being felt less and less in medical education and the influence of the research man is becoming more and more dominant. It is interesting to note certain facts. Some of our medical schools are presided over by men who do not possess the M. D. degree, sometimes these men are specialists in one of the preclinical sciences. In many of our medical schools there is not an M. D. on the boards that pass upon a candidate's fitness to enter upon the study of medicine. The above and the following observations are offered not with any intent at criticism but rather to point out by way of contrast the evolution of our system of medical education. During the first two years of the medical course in some schools there is little, if any, contact with the influence of physicians.

The education of the young physician has become a very costly proposition. The graduate in medicine today represents on an average an investment of thirty thousand dollars. For every dollar a student spends in tuition it is necessary that from three to sixteen more be added by the University. The graduate physician represents, then, besides the investments of himself, his time and his money, also the money of some State or private funds.

The primary business of a medical school is to educate doctors for the general practice of medicine. The development of research workers is highly desirable, but is not the prime object for which the medical school is organized. The specialist is one who has enjoyed experience and has had added to his original structure special educational training.

With the above thoughts in mind, let us ask ourselves the questions, Are we of the profession giving sufficient thought and sufficient attention to the education of the candidates who are entering our ranks? Are we noting the tendencies of medical education and making our influence felt?

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#### DISCUSSION ON PAPERS OF DRs. HALL AND MOORHEAD

Dr. N. P. Colwell, Secretary of the American Medical Association's Council on Medical Education and Hospitals: I am sorry that Dr. Skagg is not here to present his paper since I am sure we would have been impressed with his views.



The County Medical Society is the basic unit not only of the State Society but also of the American Medical Association. Indeed it is the foundation on which the entire medical organization rests. If you get a good secretary for your County Society, keep him as long as you can and back him up.

At the headquarters of the American Medical Association we are beginning to find out how much we depend on the County Society and its secretary. Our directory could not be so complete without the cooperation of your secretary. The secretary of each County Society checks the list of physicians in his county, adding or eliminating names as necessary, and reports in regard to removals or deaths.

As to work with hospitals, much help comes from the County Medical Societies. Two years ago the American Medical Association began publishing a hospital register. A censored list of hospitals has always been published in the Directory, but its value was not understood. It can now be understood, however, that if a hospital is included in the hospital register, it is a worthy hospital. The register includes all hospitals from seven beds up. A seven-bed hospital may be as valuable to its community as is a 300-bed hospital elsewhere. The important question is whether the hospital is a reputable and well managed one; whether it limits its staff membership to M. D.'s and does not permit chiropractors, osteopaths or other pseudo-doctors to treat patients in its walls. The first essential in any hospital is a competent staff. There may be one competent and reputable physician running the institution, with one or two nurses to help care for its patients.

When the first list was published, a representative of the Associated Press wanted to help us by giving the list a wide publicity. Up to that time, however, no special effort had been made to insure that all hospitals on the list were worthy. Where did we turn for help? To the County secretaries. We wrote a letter to each, asking if the list we sent them was correct and complete, and also asking them to give us what information they could about any that were unethical. As a result of this survey, more than 100 hospitals which were deemed unworthy were taken off the list. We are now more certain that the second edition of the register, published this year, contains the names of only reputable hospitals. It is important for people of every community to know whether the local hospitals are conducted in an ethical manner. Next to cleaning up the medical schools, the most important step has been the publishing of this list of worthy hospitals. There are now nearly 7,000 hospitals on the list.

The reason for this registry was that about three years ago we were invited to inspect a hospital which wanted to be approved for internships. Before we got through we found practices going on within those walls that no reputable person or association would be willing to stand for.

The last speaker's admirable and stimulating paper agrees with a line of thought held generally by officers

of the American Medical Association. He implied, however, that the Carnegie Foundation began the improvement of medical schools. The main object of the American Medical Association when it was organized in 1847 was the improvement of medical education in the United States. One or two committees were established to report on schools, but things could not be done as thoroughly as has been possible since 1902 when the House of Delegates was created, each state having a proportion of delegates based on the membership in doctors in each state who were members of their County Societies.

The first inspection of medical schools ever made by any organization was made in 1906-1907 by the Council on Medical Education of the American Medical Association, and in the spring of 1907 the first classification of medical schools was completed. It was found there were 162 medical schools in this country, while the rest of the world combined had only 154. Educational conditions in Europe were such that students graduating from the secondary schools who came to the United States would be given about a year and a half or two years advanced standing in our colleges or universities. To be on a par with the countries abroad, therefore, we needed to require not only a high school education, but in addition, two years of college work for admission to medical schools.

In 1907 the Council held a meeting in New York where it was arranged that the second inspection would be made jointly by representatives of the Council and of the Carnegie Foundation. It was desired that the report come from a non-medical agency.

Previous to fifty years ago the opinion of one group was as good as another. Since that time, the light of science has revealed so much regarding the germ origin of diseases that the reasons for any justifiable differences of opinion have disappeared. The Homeopaths and Eclectics have always been medical men, taught by physicians in medical schools, and have been subject to laws regulating the practice of medicine. Since the discovery of the germ-origin of many diseases, the differences of opinion have largely disappeared, and these schools are merging into one school of scientific medicine. The cultists, on the other hand, have deliberately placed themselves outside the pale of the medical profession. Under the claim that they "do not use drugs or surgery," they "are not practicing medicine" and that they "should not be required to pass the same examinations that are required of physicians." However, they cannot break into the hospitals—that is one barrier they cannot get through. It is the unanimous opinion of all hospital organizations that no hospital is worthy of being approved that does not limit its staff to reputable graduates of approved medical schools. That is the stand the American Medical Association must take, because if you make an exception in one case, however efficient he may appear to be, there will be a never-ceasing stream of still less qualified practitioners, naprapaths, chiropractors and all the rest who will demand admission to the hospital staff.

In every well conducted hospital, a hospital staff conference is regularly held, and in some localities there has been an apparent conflict between county society meetings and hospital staff conferences. The hospital conference is as important to the hospital as the executive board meeting of large business corporations. It is the meeting when the hospital takes stock of whether or not their work is of real service to their patients. In one large eastern hospital they hold a daily conference where every danger-line case is considered. I know of nothing more worthy that a hospital could do. A patient hovering between life and death, whether rich or poor, is given the benefit of this daily consultation of staff members. In regard to autopsies, their value is becoming increasingly apparent. There is no way whereby a greater skill in diagnosis can be developed than through autopsies. The percentage of autopsies found in a hospital is now recognized as an index of the hospital's educational activities.

There is a danger, as pointed out by Dr. Moorehead, where universities, lay foundations, or lay people presume to decide issues in regard to medical education, hospitals or medical practice. There is too much of a tendency for lay people to dictate to doctors regarding matters of public health. I think, however, the tendency is swinging the other way.

There is an important way in which the medical schools can render a valuable service and that is to emphasize to its senior classes the importance of joining their county medical societies and becoming active on programs and in organization work. Since the County Society is the basis of our state and national medical organizations, it is important that the best men get into harness and appear on programs. Then the future of our medical affairs and institutions will be in safe hands.

Dr. E. R. Miner, Macomb: Having been secretary of our County Society over a considerable period, I know what a difficult task it is to keep the Society together as much as possible, and I feel that in our Society the social part has had a great deal to do with it. We have our meetings in the evening, have dinner at the hotel and invite the wives of the members to dinner. The ladies hold their own meeting and we have our scientific meeting. We have had good attendance since following that plan. I write a letter to each member and call up the members who are in town, and they generally turn out pretty well.

Dr. R. O. Stites, Industry: Previous to the time Dr. Miner was secretary of our Society we were meeting in the basement of the bank and frequently we had to go out and hunt up a quorum. She has done wonders in building up our Society. She took us home one night and fed us, and now we have a room in which we meet in the hotel and we have a good attendance and the credit is due entirely to Dr. Miner. We elected her secretary for life—I think all good secretaries should be elected for life.

I was interested in Dr. Hall's comments. I think

we have the best possible health service, but an indifferent public. As to the prevalence of smallpox, a town, twelve miles from where I practice, had a high school teacher who developed smallpox, and who traveled seventy miles to a town of 35,000 during his illness. How that could happen is more than I can understand—how anyone could get on a public payroll, teaching children and coming into contact with hundreds of people, without being vaccinated against smallpox, which is an absolute 100 per cent scientific procedure and has been so for 130 years, is also more than I can understand.

About a month ago I read a news item stating that Pike County had eleven cases of smallpox on the County Farm, the superintendent among them. No one was apparently alarmed. The next *Sunday Tribune* carried a story that the French were much alarmed because two cases of smallpox had been discovered in Paris, who apparently came in from London in an airplane.

The French have had no smallpox in their native born in the memory of anyone I talked to while in France, during 18 months of army service. Who is wise?

In my work in France in the army, women would come to me quite frequently because most of their doctors were in the army. They wanted their infants vaccinated, did not know what for, but said it was the custom. That was beautiful! Why cannot it be a custom here, just as it is to put silver nitrate into a child's eyes at birth. You can't get out of the house without that procedure now, but when I began to practice I could not do it unless it was done on the sly in many cases.

During the past few months I have left Educational Health Circular No. 4 and No. 11 from the Department of Public Health with each mother of a new born babe on my final visit, with a personal letter which reads:

"My dear Friends:

"Read these little leaflets carefully. They contain the best advice you will ever obtain for the future health of your baby. If you do not believe in what they say, think of who you would call if your child was to:

- "1, break its leg,
- "2, develop appendicitis,
- "3, contract diphtheria,
- "4, contract smallpox,

then go and ask that man or woman for advice and take it. Do not listen to parrot stories.

"Your friend,

"R. O. STITES."

I do not know much about medical education but I am interested in Dr. Moorehead's talk. He very courteously says that he was not going to criticize why laymen were in control of most medical schools, but I am going to ask him why?

Dr. M. Earl Brennan, East St. Louis: I will confine my discussion to Dr. Moorehead's paper as prac-



tically all the discussions so far have been on Dr. Andy Hall's paper. I think the medical student of today without any question is much better fitted all around to start in the practice of medicine than in the old days. But, as Dr. Moorehead has said, in the recent past medical education has gotten farther and farther away from the medical profession and has been taken over to a large extent by educators and full time instructors who are qualified in only one branch or another.

I think they are trying to make too perfect a student from a scientific standpoint and are losing sight of the art of the practice of medicine. I think some of our greatest medical men have said that, strictly speaking, science alone cannot cure much more than ten per cent. of our patients.

Our Trade Schools teach their students sufficient chemistry, physics and other subjects—all that is necessary to know to be a good bricklayer or plumber. But they also teach them how to lay brick and do plumbing. It is not necessary to be a graduate chemist or a mechanical engineer to be a bricklayer or a plumber.

It reminds me of the story of the ideal man who did not drink, chew, smoke, eat meat, use profane language, and so on. And someone asked, "What good is he? What does he live for?" We give these boys a wonderful education from a scientific viewpoint, but what are they going to do when they get out?

Our medical schools are all located in large centers of population. The students are trained and taught to practice medicine as it is practiced in large clinics or large institutions, which is quite different from the practice that will be necessary when they start out for themselves. They are lost. One of these students gets an infant with diarrhea in the summer time and thinks it cannot be treated properly except in a hospital where it is sent and much laboratory and other work done which may cost the parents around seventy-five dollars. Maybe this information will be of no value to the patient and may not change the treatment. He cannot take care of it in the home, and the chances are that its own mother could give it better care than the hospital, except in certain cases.

The full time medical instructor, in my opinion, is not the proper contact particularly for the later years of medicine. We want our children to look up to their instructors and teachers, to follow their example, to imitate them, and the purely scientific man with but one interest, the scientific aspect, who never treated a patient, who never wrote a prescription or gave a pill in his life—that is not the kind of a man a student should try to follow.

If you teach a man all there is to know about a switch engine, every detail of it, he cannot run it. He needs something else besides the science of it. Dr. Moorehead said, "The prime function of a medical school is to teach men the general practice of medicine." It is true that all men should be true general practitioners. Ninety per cent. of the work is general practice. A man may limit himself to a certain extent,

but as a rule, he does general work. I would like to add to Dr. Moorehead's statement—they should be taught to use more reason and judgment, to use their heads and not to follow too much routine.

Dr. D. D. Monroe, Edwardsville: The medical schools have been urged to ask graduates to join the medical societies. The County Medical Society should do likewise. I asked three graduates to join and they did. They are pliable and young—they have not found themselves yet and it is a good time to get them interested and keep them interested in medical organization. I suggest that the county secretaries ask these men to join their society, immediately upon their graduation and get them started right.

Dr. J. R. Neal, Springfield: Dr. Brennan brought out some important points in discussing the very able paper read by Dr. Moorhead. However, I feel that some of his statements are not quite clear, or at least I did not understand them. While it may be true that the recent medical graduate, who is just entering practice, may be over-anxious and at times indiscreet regarding the amount of necessary laboratory examination, yet I think that this is a problem that the older practitioner should take upon himself to suggest to the embryo physician that a bedside diagnosis is much to be desired, and that needless expensive laboratory examinations are to be used only when the physical findings are obscure. I do not believe that medical schools should be condemned for their methods of teaching, but obviously, a physician should not attempt to use off his first patient all of the laboratory knowledge that he has received in his medical course. I assume that we all agree that the best of physicians are none too good, and certainly we can't make them better by having a more elementary curriculum. If I misunderstood Dr. Brennan's thought I wish to offer due apologies.

Dr. Hall's paper was very interesting, and I always like the opportunity of stressing the importance of the small medical society, and always disapprove of the thought that some of the very small societies have in proposing to merge with some larger county society. No one has ever heard of politicians asking that two senatorial districts be merged on account of so few votes, for it is to be recalled that each senatorial district, irrespective of its population, has one senator and three representatives in the State Legislature.

For many years I have been connected with your Legislative Committee, and I find that the senators and representatives from the smaller districts are very largely guided in their actions regarding bills which have to do with physicians and the public health, by the advice of the medical men residing in the district from which they are elected. If there were no medical society, obviously, this helpful influence would be abolished. I feel that the small society is really just as important, in a legislative way, at least, as the Chicago Medical Society.

It is indeed gratifying to have Dr. Colwell with us, and to hear his discussion of Dr. Hall's and Dr.

Moorehead's papers. He brought out the very important point that in correlating the necessary statistics for the American Medical Association regarding the standardization of hospitals, he depends upon the secretary of the local medical society to get the right information regarding the hospital in question. At the present time I am serving as Secretary on the Medical Examining Board for the State of Illinois, and some time ago we received an application from a doctor in West Virginia who desired to practice in Illinois and in his application he stated the name of the hospital in which he had served his internship. We, of course, have similar applications from every state in the Union, and it is necessary to know the kind of hospital that these applicants have served in. Instead of having to write, or to go and investigate the hospital in West Virginia, it was but an easy matter to write to Dr. Colwell's department, and we had the information within twenty-four hours.

The American Medical Association would not be possible without the state organizations, and they, in turn, could do nothing without the active support of the County Medical Society, which, after all, is the unit around which organized medicine is built. I do not believe that we can over-estimate the importance of the County Medical Society, no matter how small it may be, providing the doctors take an interest in it and attend every meeting that is possible.

Dr. J. S. Templeton, Pinckneyville: I want to emphasize what Dr. John Neal has just said. We can have a meeting every month whether we have a hundred present or only a few. We can have a very interesting and successful meeting without such a large attendance. Do not let us consider giving up any of our Societies because they are small. We have a much better effect on the community by retaining our organization. It is a good idea to occasionally invite a neighboring County to join with you. I think it for the best interest of the profession that we have a society in every County.

Dr. Frank L. Rector, Chicago: I would like to tell you a few things that have come to my attention as to the methods by which the Chicago Medical Society has been of benefit to the membership. Recently the medical director of a large industrial corporation in Chicago came to my office and told me he was in trouble. Their director of personnel had given permission to a group of optometrists to come into the general office, approximately 1,600 people, and examine the eyes of the employees. The examination was to be free and the people were supposed to pay for the glasses if and as prescribed. I suggested that we write a letter saying that the Chicago Medical Society did not think that was the thing to do. This firm, by the way, is engaged in the manufacture of endocrine products as a part of its business. Such a letter was sent and the optometrists who had moved in and started to work moved out that same afternoon.

Another situation arose in which a vigorous attempt was made to organize an obstetrical clinic in the south part of Chicago. The local chamber of commerce made

a survey and afterward recommended that it be not established, and it was not. In the northwest part of the city a hospital was undertaking a large campaign for an endowment, part of which was to be used for the establishment of a free clinic. The physicians of that vicinity were sure that such a clinic was not needed, and again, through the cooperation of the Association of Commerce in Chicago, that activity was suspended.

We are programmed to death in Chicago with medical meetings. The central society has a meeting once a week; our fifteen branches meet once a month; fifteen or more specialty societies meet monthly, and in addition to that there are a number of other special groups, hospital conferences and meetings of a similar type, so that if one undertakes to attend them all there is little time for anything else. We recently organized a program committee in the Council and that committee is actively at work on programs for the coming year. We hope during this year to devote at least one monthly meeting to public matters. Such meetings of that nature as have been held, cancer meetings, for instance, and one or two others have been crowded—five or six times the number in attendance as at the ordinary meetings.

We have one activity under way—the organization of a medical student's advisory board, to bring to the attention of senior medical students and recently graduated physicians some basic knowledge regarding the standardization of medical education, medical organization and medical legislation. These problems are not discussed to any extent in the medical curriculum, but these men should have information of that kind in order that they may properly orient themselves to the professional world. We hope it will be possible to give these talks in the various hospitals, and where requested, in the medical schools. We also want to make possible and practicable the early affiliation of the young graduates with the medical societies. A number of medical societies have provided for a reduced fee for junior members, which is a great step in the right direction.

Dr. L. D. Moorhead, Chicago (closing): There are one or two points I would like to stress in closing this discussion. What is the contact between the medical profession and the medical school? As it exists today it is twofold, through the Council on Medical Education, and through the alumni of the medical school itself. They are the only two contacts with the medical profession. What about these contacts? The first is really the only influence that is felt.

Dr. Colwell mentioned the Carnegie Foundation. I stressed their part in the survey of medical schools because since the report came from a body outside the medical profession it looked more startling, and because those people do things but the entire work of improving medical education and of standardization and qualification of the medical institutions of this country was done by the Council on Medical Education of the American Medical Association. As we



have come on their work has been enlarged, and as the medical schools have become greater the only place to turn for help and information is to the Council. That is a direct contact with the medical profession and the only direct contact. How much has your individual information been with regard to alumni matters since you left school? Are you a factor in the affairs of the school? Are you making yourself felt in the policies of your medical school today? Have you exerted yourself as an alumnus? I expect the same thing is true of a majority of the medical men of the country, but the same factor is not true of the boards of trustees and governing boards. That is the answer to the question, Why is the layman coming more and more into prominence in such matters? The answer is that the medical profession is not exerting itself and simply stands aside and lets someone else do it, and the lay boards are making themselves more and more prominent.

When a young man or woman comes to you and asks where he or she shall enter medical school, are you recommending a school that is maintaining a contact with the medical profession or one that has a good register, concerning which you do not know the internal policies?

What about the number of individuals entering the practice of medicine? It is increasing every year. On the first of the year we had over one thousand applications on file for admission to the freshman class, and we have 140 places. There is a shortage of medical schools and a great increase in the number of candidates.

Speaking of county medical societies and whether the young physician is going to join it or not. As has been said here today, the young candidate is willing, pliable material, and I would like to ask what you are doing for him. This young man is on his own for the first time in five years, during which time he has been under the influence of his educators, and he is now going out into a new country. He is not able to make a place for himself. He is willing material, but there are not so many County Societies that devote some time to such an individual. He can be used in a number of different places. There has been a statement made to the effect that if an individual in the practice of medicine were to cease reading medical articles for three years he would not be able to understand the articles appearing in print at the end of that time—there would be new experimental work and new tests in the literature which he would know nothing about. The busy physician cannot keep track of everything that comes out, and cannot keep up with all the material, but the young man who comes into your community would have the time and the interest to look these things up. You could have a committee of the younger men to review this work and present it in some clear way at the meetings or have it on hand for the use of the society. This is one thing, and there are a number of other ways in which you could utilize his services and keep him interested.

## WE PHYSICIANS AND OUR SICK

WELLER VAN HOOK, M. D.,

CHICAGO

The specious reasoning of socialism, Marxian and otherwise, has permeated modern life from the Urals westward to our Pacific Coast. Its fallacious reasoning leads to distortion of almost every view of life's requirements.

For medicine its results have been especially disastrous by interfering with many of our most cherished long-established inter-relations.

Since Hippocratic days sick men have sought not slot-machine cures for their ills—but the aid of sympathetic men who have been trained in the lore of the normal and of the aberrant human body. These three elements are necessary, inseparable from one another—sick men, physicians and mutual adaptation. And, when joined, there is need for but little more for complete satisfaction.

In fact, interference between the *personal patient* and the *personal physician* is erroneous and disastrous. Interference has never occurred satisfactorily and it never will occur. When the soldier is put under the care of his military surgeon he becomes and remains a slave. Sometimes he becomes cured of his disease but not as a true man in the full charge of his own body and its fate. Under such care he cannot have the important broad lessons to which each man's tenure of his physical vehicle entitles him. He and his physician are relatively enslaved.

Clinics have the same unsatisfactory effect—of separating the true man from his manly physician. The patient visits the clinic, not his own tried personal physician. The clinic physician works as a cog in a machine, not as the personal friend of the man who occasionally calls on him when ill or indisposed.

Henry Ford hospitals, Jones clinics, University clinics and state institutions *cannot* and *will never* supersede the ancient private relationship between the physician and his patient, because men do not wish to be treated so. The force of money and of legal authority can disturb but partially and occasionally because true men will not wish such relations.

As to the cost, our sons as physicians will agree with rich and poor as to equitable sums in expense, as was done by those who followed Hip-

pocrates, our own fathers and ourselves. For decades my patients and yours, rich and poor, have been satisfied. Time will never change that. You and I know how to run through the long decades of life in the satisfaction of our happy service to our fellow men.

Of course there have been knavish physicians and bad sick men. But they are exceptions. There will always be half-quackish clinics. And the state may impose political physicians on some part of the self-seeking body of the people. But the more intelligent and refined we and our patients become the less will schemes be followed that tend to separate the free citizen from his *friend* the physician whom he will gladly reward as well as he can!

For the same reasons there will always be, as there have always been, *general practitioners* who will gladly call specialists to their aid when needed. The work of medical men is too near to God's service to be vitally disturbed. Let us alone—physicians and sick—we are not at odds, we are helping each other as our fathers have done for thousands of years.

31 No. State St.

## CARDIOSPASM (ESOPHAGUS)

M. H. STREICHER, M. D.

Clinical Associate in Medicine, Research & Educational Hospitals,  
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Hospital

CHICAGO

The term "cardiospasm" is used to designate a clinical entity characterized by a spasmodic contraction of the muscles of the cardia, the production of pain and difficulty in swallowing, associated with a diffuse dilatation of the esophagus at the diaphragmatic orifice with a prolonged retention of food. Considerable literature has been written on the subject and various theories have been advanced as to the probable causation of the spasmodic contractures of the esophagus at the cardia. In a careful study of the literature on cardiospasm one may summarize the possibilities either on the basis of existent anatomical defect present in the stomach at the cardia or on some indefinite disturbance of the nerve muscle mechanism at the esophagus.

In the opinion of Smithies an extra-esophageal lesion gives rise to the repeated, powerful, long-maintained contractions of the cardia, thus

producing the muscular hypertrophy of the cardiac sphincter. Kraus considers the condition due to the development of persistent spasm of the cardia associated with paralysis of the circular muscles of the esophagus apparently due to degenerative changes in the vagi. Plummer believes that some disturbance in the nerve muscle mechanism of the esophagus exists plus changes at the cardiac sphincter. Rehfus states that due to faulty nerve supply the esophagus cannot relax and it is, therefore, that Hurst names this condition "achalasia."

In the past two years we have observed 13 cases in our clinic. There were 7 males and 6 females in the group, varying in age from 19 to 52. The clinical symptomatology in this group were:

Dysphagia exaggerated upon eating of apples and fluids, accompanied by vomiting. The vomitus consisted mainly of undigested food and was alkaline in reaction. Moderate loss of weight was observed in all 13 cases. Another common symptom was regurgitation unaccompanied by vomiting. Actual projectile vomiting was ob-

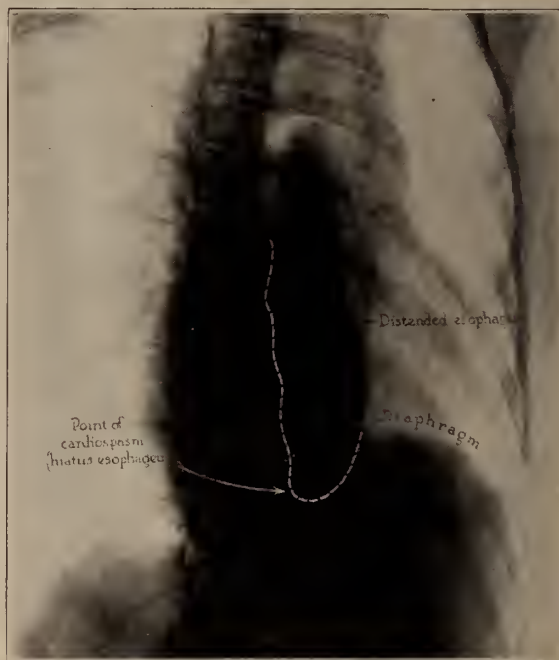


Figure 1. Shows a marked retention of the opaque meal at the cardia with dilatation of the entire course of the esophagus above the cardia.

served only in 2 cases; this usually followed immediate intake of food. We have not observed any blood in the vomitus in any of the cases in



this group—this finding has been reported by several clinicians. The hematemesis is apparently due to excessive dilatation of the varicose veins in the lowermost portions of the esophagus during extreme spasmodic contractions.

The following is a brief summary of a few representative cases of cardiospasm with roentgenologic findings:

Case 1. Is a white female, 52 years of age, presenting a clinical course of a cardiospasm of six years' duration with a loss of 30 pounds in the last two years and a marked secondary anemia. The patient states that even ten years ago she has often complained of spells of nausea and vomiting but did not consider it seriously until the symptoms became very marked. She has been treated by several physicians in the past but apparently for some other ailment. Figure one is an x-ray representation of this case.



Figure 2. This picture shows the contraction at the cardia and the opaque meal retention of about four hours. The dilatation of the esophageal wall was more marked than in Figure 1, but the contour was normal.

Case 2. Is a case of a young man, white, 19 years of age, who presented a history of having had this ailment diagnosed as cardiospasm ever since he was 6 years old. This was one of the two cases of this series in which projectile vomiting was a prominent symptom. No secondary anemia was evident. Figure two is an x-ray of this case.

Case 3. Is that of a white female 35 years of age, who states that she has had gastric distress ever since an attack of influenza in 1918. In the past three years marked regurgitation occurred which became progres-

sively worse. The time interval was variable and no bleeding observed. Exaggeration by fluid intake was present. She has lost 75 pounds in the past three years. One of the interesting features in this case is the presence of a leucocytosis (16,600). When the chest was examined fluoroscopically it showed a diffuse increased density over left lower chest with a definite fluid level. The pleural fluid was withdrawn and examined for tubercle bacilli. Guinea pig inoculation and sputa were repeatedly negative. The temperature ranged from 101.4 to 97.6, but gradually came down to normal and remained at that level. The symptoms of cardiospasm, however, did not subside entirely, but were markedly alleviated after the pleural fluid was removed.

The esophagus examined with opaque meal showed a marked obstruction at the cardia. The opaque meal entering the stomach was deflected towards the left as if circling about a round mass. The diagnosis suggested was that of a cardiospasm probably of extra gastric origin, causing pressure against the upper portion of the stomach. The opaque meal examination was repeated several days later and a clear cut pic-



Figure 3. X-ray film photograph of a contraction at the cardia and a marked retention of six hours' duration.

ture of a true cardiospasm was observed. Figure three is taken from this case.

Comment: A careful history and an x-ray examination of the esophagus with opaque

meal usually suffices to make the diagnosis of cardiospasm. It is interesting to note the reference made by Smithies that he has observed "doming" of the diaphragm in well developed cardiospasm cases; also that on x-ray examination "piling up" in the region of the hiatus of the diaphragm was noted—this, he believes is due to local hypertrophy. Esophagoscopy examination may be a great aid in differential diagnosis of doubtful cases. To me these cases have been of special interest from the standpoint of treatment. It seems fairly certain that a positive diagnosis say be made by the average good physician but the results of therapy are discouraging. Benzyl benzoate, belladonna and other antispasmodics have been used extensively for many years with comparatively fair results in many cases. Belladonna has been used in all cases of this group with unsatisfactory results. Another form of treatment that has been largely advocated by the general practitioner is routine passage of bougies of variable sizes by a swallowed silk thread.

In case 2 of the young man of 19 years, the patient received bougie treatments for 6 years three times weekly with no results at all. My experience with bougie and belladonna in this series, and many others, has been discouraging and I, therefore, have practically abandoned these methods entirely. There is one instrument that is perhaps the best solution for this problem, and that is the Plummer Hydrostatic Cardiospasm Dilator. I am glad to be in a position to state that our results with the use of this instrument have been most encouraging. Plummer and Vinson state that 76 per cent of their cases were completely cured by one dilatation with this instrument.

The principle of the instrument is to introduce water into the bag, thus dilating it to a certain level of water pressure. The water is not introduced until after the stem is passed into the esophagus. The success of the dilatation depends mainly on the fact that the bag at its maximum dilatation (water pressure) spans across the hiatus of the diaphragm and "over-dilates the diaphragmatic pinchcock." It is needless to mention the dangers associated with this sort of procedure and, therefore, it is not advisable to attempt the use of this instrument without due training. The advantage over

the bougie method is two-fold: one cannot introduce very large size bougies into the pharynx, and secondly the olive tip or other forms of bougie do not possess the power of "*gradual expansibility*" required to over-dilate the hiatus esophagus.

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### TOXEMIAS IN PREGNANCY\*

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The toxemias of pregnancy are, we feel, for the most part, at least, an expression of the body reaction to an altered metabolic state brought about by the stimulation of the glands of internal secretion and the sympathetic nervous system due to the presence and development of the embryo and its placenta.

Probably the most important of these from a practical standpoint is the eclamptogenic toxemia. This condition has rightfully been called the disease of theories. All are agreed that the condition is a toxemia. That it occurs only in pregnant or recently pregnant women and very rarely before the sixth month of pregnancy or later than a week after delivery. It is characterized clinically by high blood pressure, as a rule, headache, nausea, vomiting, epigastric pain, blurred vision, and a varying degree of edema and albuminuria. Pathologically there is seen a varying degree of degeneration in the parenchymatous organs chiefly but not constantly in the liver, kidney, heart and brain.

The most characteristic lesion in the liver is a thrombosis of the portal vein radicles with a degeneration of the cells of the liver lobule surrounding the portal system. The kidney usually shows an acute parenchymatous nephritis with degeneration especially of the cells of the convoluted tubules in the cortex. The cardiac muscle may show areas of degeneration of the muscle fibres. The brain is frequently edematous and there are small meningeal hemorrhages. These changes are primarily the effects of the toxemia but secondarily must inevitably add to the intoxication by interfering with the normal

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detoxifying function of the liver in relation to the end products of protein metabolism and also in decreasing seriously the excretory function of the kidney. The cardiac and brain pathology contribute to the vicious circle by adversely affecting the circulation and respiratory exchange.

Our conception of this toxemia is that it is a split protein toxin. That it is derived from three main sources as illustrated by the accompanying diagram, namely, the endogenous and exogenous protein metabolism and the fetus and its placenta.

The level of toxins in the blood is maintained by the ratio of toxins excreted by the kidney and bowel to that taken in from the above mentioned sources. If the amount taken in is increased and the ability to excrete is decreased, then we have a rising level of toxins and a pre-eclamptic toxemia. Our treatment, therefore, must be first to decrease the amount of protein split products entering the blood stream and second to promote elimination of toxins already formed and to initiate this treatment before the toxemia has damaged the parenchymatous organs too severely.

By adopting this viewpoint as a working hypothesis we have handled two hundred and sixty-five women with pre-eclamptic and nephritic toxemia without a maternal death. We draw the conclusion from this that eclampsia is a disease of neglect. Intensive and intelligent prenatal care will practically wipe the disease out of existence.

Our routine management consists in bed rest and milk diet for every patient showing a pressure over 140 systolic if the pressure has previously been lower and for patients who develop an albuminuria with casts during pregnancy. If improvement occurs more diet and exercise are permitted under close supervision. If improvement does not occur or if the symptoms are aggravated the pregnancy should be terminated as rapidly and conservatively as possible. Depending upon the speed with which the toxemia is developing and the concomitant obstetrical condition, we advise quinine and castor oil, bag induction or caesarean section. The latter operation is reserved for those cases in which the onset of the toxic symptoms is fulminating or in which a caesarean section is indicated be-

cause of contracted pelvis or some other obstetrical indication.

*Nephritic Toxemia.* The nephritic toxemia on the basis of this conception is due to a failure of the damaged kidneys to compensate for the additional burden imposed by the stimulation of the metabolic processes by the pregnancy. As would be expected, the evidences of this break in compensation often occur early in the pregnancy, the actual time in a given case depending on the degree of damage previously sustained by the kidney and its remaining ability to compensate.

Naturally, the ability to control this type of toxemia is limited due to its early appearance during pregnancy and the dependence of the body on the excretory function of the kidney. Therapeutic abortion or the induction of premature labor is more often necessary than in the eclamptogenic type because of its later occurrence. Another fact that we have noted in connection with these cases is a tendency to intra-uterine death of the fetus in a greater proportion of cases than in eclamptogenic toxemia. This probably is best explained on the basis of placental infarcts due to the changes in the uterine and placenta blood vessels. It is apparent from the undernourished appearance and general behavior that these babies are affected by the toxins circulating in the blood of the mothers.

Our management in the nephritic toxemia if seen early is bed rest, milk diet, Mosenthal and phenolsulphonephthalein kidney function tests and clinical observations to determine the work capacity of the kidneys. If compensation can be maintained the pregnancy may be continued. If not it should be terminated as conservatively as possible. In certain cases in which the fetus is on the border line of viability and the patient can be completely controlled temporizing measures may be adopted if the patient and her family realize and accept the dangers. The management in the neglected cases where edema and cardiac decompensation are an important part of the clinical picture necessitates immediate emptying of the uterus regardless of the stage of pregnancy. Bag induction of labor or vaginal or abdominal Cesarean section may be done depending on the surroundings of the patient and the skill of the operator. When these are both satis-

factory the more radical operative delivery is recommended.

*Hyperemesis Gravidarum.* When pregnancy has been established about a month or six weeks there occurs in the majority of women a feeling of nausea usually most marked in the mornings and in about fifty per cent. of the cases accompanied by vomiting. This gastro-intestinal disturbance is thought to be due to a toxemia initiated by the changes brought about in the maternal organism by the pregnancy. Certain of these cases have been ascribed to nervous or reflex causes because of cures affected by mental suggestion or by the removal or correction of some pathological condition not directly concerned with the pregnancy such as an endocervicitis, retroversion of the uterus or small ovarian cyst. As a rule the body is able to adjust itself to the new conditions and by the end of the third lunar month the majority of patients are more or less completely relieved of the condition. In certain women, however, the vomiting continues and becomes incessant, extreme weakness, and prostration develops, and if allowed to go on too long the patient dies whether or not the pregnancy is terminated.

The pathological changes seen in these cases are most noticeable in the liver where central necrosis of the liver lobule is seen.

The kidneys show an acute parenchymatous nephritis in many cases, and clinically a multiple neuritis is noted.

Our explanation for this phenomena is that a starvation acidosis is superimposed upon a state of unstable and abnormal irritability of the sympathetic nervous system, associated with alterations in the secretion of the ductless glands, and possibly in part due to vitamine deficiency produced by the starvation. There are many facts that evidence the presence of a starvation acidosis in these cases. The rapid loss of weight, the presence of acetone and diacetic acid in the urine and the increased  $\text{CO}_2$  combining power of the blood have all been abundantly demonstrated. The instability or abnormal irritability of the sympathetic nervous system is shown by the vaso-motor reactions dermatographia, urticaria, salivation and similar disorders. These are frequently most severe in patients with marked nausea. The alterations in the glands of internal secretion is seen in the

tremor, tachycardia, basal metabolic rate increase, pigmentary changes, loss of hair, thickness of the hands and coarsening of the features. The vitamine deficiency is obvious from the starvation in all foods and is further evidenced by the multiple neuritis so often seen. Here again we believe that the prophylactic management is the only worth-while treatment. The balance is comparatively easily established early in the disease. In the extreme type, produced by neglect, even the termination of the pregnancy, the original cause, will not prevent the fatal outcome.

We advise for these cases bed rest, force fluids and alcohol by proctoclysis or hypodermoclysis, bromides as sedatives, sugar solution intravenously to combat dehydration and to help supply food in a simple form. Fruit juices and yeast are added as soon as tolerated by mouth and a soft diet as soon as the patient can take and control liquids. The nervous and reflex types we feel are simply less toxic types of pernicious vomiting. Abortion may be necessary and should not be too long postponed as I have seen two patients die a month after a therapeutic abortion for pernicious vomiting was performed, and complete autopsy failed to reveal lesions sufficiently extensive to account for the deaths. The source of the poison is less clearly discernible in these cases and it appears to be more clearly akin to disease of metabolism such as thyrotoxicosis.

*Hyperthyroidism.* This condition is not ordinarily classified as a toxemia of pregnancy by obstetricians, but recent work has indicated that this form of intoxication is not so infrequent. It may present itself in several forms. The simplest and most common variety is the mild hyperthyroidism that occurs relatively early in pregnancy and which continues throughout giving mild symptoms which are usually overlooked by the medical attendant. These consist of slight enlargement of the gland, tremor, sweating, tachycardia on exertion and an increased basal metabolic rate. The toxemia is probably due to a stimulation of the thyroid gland due to the presence of the pregnancy and its associated changes in metabolism. Lugol's solution in ten drop doses three times a day seems to prevent or control its development in a given case.

Pregnancy may occur in a women who has an



active or latent exophthalmic goiter. When this occurs a curious situation develops. The symptoms of thyrotoxicosis may get better or more often are aggravated, or rarely remain unaffected. When they get worse a true thyroid crisis may supervene and the associated nausea and vomiting may easily be mistaken for hyperemesis gravidarum and the thyroid element in the diagnosis be overlooked. Indeed from our recent investigations it would seem that there might be a strong thyroid element in all hyperemesis gravidarum because of the response to Lugol's solution noted in many cases. Until recently the treatment of these cases has been universally surgical, after a brief preparation treatment of bed rest and Lugol's solution. I have shown that these cases may be carried to term or at least to viability of the child by bed rest and Lugol's solution, and that by so doing the fetal mortality is reduced. Also we have found that the thyrotoxicosis is remarkably reduced, frequently immediately after labor. Therefore it would seem to be a mistake to operate on these cases until the extent of the normal puerperal adjustment might be determined. Indeed it is conceivable that a condition of hypothyroidism might result due to the removal of too much thyroid tissue for the proper balance in the non-pregnant state.

A third group of women may present the evidences of a toxic adenoma. These are usually older women, and the more serious cases are concerned with pressure phenomena on the trachea and recurrent laryngeal nerves leading to dyspnea and aphonia. Thyrotoxic symptoms may also occur, and Mussey and Plummer have warned against the indiscriminate use of Lugol's solution in these cases because of the unfavorable reactions resulting therefrom.

A fourth group of cases coming under the care of the obstetrician are those women who have become pregnant following a partial removal of the thyroid gland for hyperthyroidism. These cases are not so commonly seen and our experience is limited to four cases. Three of these went through their pregnancy, labor and the puerperium smoothly and without serious evidence of thyrotoxicosis. The fourth, however, went through pregnancy with some nervous imbalance, stood the labor fairly well, but became very nervous after leaving the hospital and had

to be sent to a sanitarium. In most cases, I believe, these women should be given a good prognosis. They should be watched carefully for evidences of thyrotoxicosis and treated for this condition as soon as symptoms are manifest. Severe intoxications may call for abortions or premature labor.

*Acute Yellow Atrophy.* This condition is very rare and very imperfectly understood. It is characterized by an acute degenerative and atrophic change in the liver of pregnant women coming on at various stages of pregnancy. It is associated with marked degenerative changes in the convoluted tubules of the kidneys and some splenic enlargement. The etiology is obscure, and various forms of intoxication have preceded the onset of the acute yellow atrophy. Thus it has followed eclampsia, hyperemesis gravidarum, chloroform administration in ordinary dosage, and also has been described as occurring without any demonstrable preceding etiological factor.

By analogy it might be supposed that the liver cells are damaged and undergo degeneration either as a result of primary changes in the cells themselves or secondary to the development of a powerful endogenous or exogenous toxin with a selective action for liver and kidney cells. The liver and kidney destruction when well advanced lead to metabolic disturbances incompatible with life.

The onset of serious symptoms is usually abrupt with nausea, vomiting, headache, jaundice and lactation followed by coma, convulsions and death in a few days. Albuminuria is usually present and the ammonia coefficient high. The marked jaundice and the clinically demonstrable decrease in the liver dullness are the most characteristic diagnostic features.

The termination of pregnancy is advised as soon as the diagnosis is made and the prognosis is very poor. The mortality is said to be one hundred per cent, by most authors, and that cases that have been reported as cured are in reality not true cases of acute yellow atrophy. The safe rule to follow is that any pregnant patient having symptoms of toxemia who shows evidence of liver destruction should have the pregnancy terminated.

Other toxemias of pregnancy have been described such as severe anemias, dermatosis, sali-

vation, and severe acute multiple neuritis and psychosis. These we believe are simply part of the picture of the intoxications we have already mentioned and hardly deserve rating as separate clinical entities. Their treatment is symptomatic for the most part and along the lines mentioned for the foregoing conditions.

In summary we may conclude:

1. Pregnancy toxemias are fundamentally metabolic disturbances in the pregnant woman.

2. Eclampsyogenic and nephritic toxemias are due primarily to a failure of the normal relationship between production and excretion of the end products of protein metabolism resulting in a retention in the blood stream of substances which if allowed to accumulate to a sufficient extent will result in convulsions and death of the patient.

3. Rational management will prevent mortality for the mother and limit fetal mortality in practically all cases.

4. Hyperemesis gravidarum is probably a closely related toxemia produced by abnormal irritability of the sympathetic nervous system and changes in the glands of internal secretion induced by the pregnant state augmented in the later stages by a starvation acidosis and vitamin deficiency.

5. Hyperthyroidism is frequently seen in pregnancy and varies from a mild hyperthyroidism to severe forms of exophthalmic goiter and toxic adenomata. Medical management will control most if not all of these cases during pregnancy and should be given a thorough trial before resorting to surgical intervention.

## CARCINOMA OF THE LUNG\*

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*A. Frequency.* In recent years the carcinomas of the lung have attracted special attention on account of their increasing frequency during the last two decades. In spite of the still existing controversy about the increase of the carcinomas in general this observation seems to be a well established fact, according to the result

of critical and comparative investigations of numerous authors. While in statistics in which the autoptic material of the time before 1900 was used these tumors represent only 1-2.5 per cent. of all carcinomas (Ewing, Kaufmann, Fuchs, Pässler, Probst, etc.), these figures go up if the more recent post mortem material is examined Wahl 9.7 per cent (1917-1927), Hueper 10 per cent. (1911-1921), Ferenszy and Matolscy 5.0 per cent. (1914) and 10.3 per cent. (1924), Kikuth 9.4 per cent (1924), Staehelin 4.9 per cent. (1924), Seyfarth 8 per cent. (1920-1924), Probst 7.17 per cent. (1921-1925), Lubarsch 4.5 per cent., Barron 10 per cent. (1919-21), etc. Only Marchenasi (Innsbruck) and Eichengrün and Esser (Koelln) were unable to state an increase of these carcinomas in recent years from their material. The work of Probst is especially instructive because he compared and evaluated the data of 24 authors on this subject surveying a period from 1852 to 1925. He came to the conclusion that independently from an apparent minor increase of the carcinomas in general and with consideration of all errors possible in compilations of this type a definite increase of the carcinomas of the lung had to be noted. A similar statement was made by Wahl who found that the lung carcinomas showed an increase in frequency in recent years of 6.97 per cent. against that of the carcinomas in general of 2.68 per cent.

The carcinoma of the lung is more frequent among men than women. The ratio men to women is according to Wahl 2:1, Seyfarth 5.3:1, Berblinger 2.7:1, Lubarsch 3.51:1, Fishberg 2.7:1, Adler 2.7:1, Kikuth 1.8:1, Hanf 5:1, Ewing 3:1, Brandt 8:1, Brechwaldt 2.88:1, Probst 4.43:1. The carcinoma of the lung is most frequent in persons between 40-60 years of age. The climax is found in the fifth decade. The increase of the lung carcinomas was most marked in Germany, Austria, Switzerland, the Baltic states and United States, while there was not any or only a slight increase in the Scandinavian countries and France, according to the statistics available at the present time.

*B. Etiology.* The numerous factors which are regarded as important in regard to the etiology of the neoplasms can be classified into

\*Presented to the Staff of Mercy Hospital, July, 1928.



two main groups according to their endogenous or exogenous character.

### 1. ENDOGENOUS FACTORS

(a) The organic and functional changes which take place during the aging process are generally recognized as favoring the development of carcinomas. Persons of asthenic type and excellent general health are according to Schmidt especially disposed to tumors after their fiftieth year.

(b) A congenitally weak constitution as present in persons being one of the last ones borne in a large number of children and caused by an exhaustion of the material organism (Schmidt) or found in persons with constitutional metabolic diseases in the ascendance or in persons with malformations as especially misplaced fetal bronchial tissue and fetal bronchiectases or with neoplasms as bronchial papillomas is favoring tumor development.

(c) Hereditary disposition present in persons coming from cancer families.

### 2. EXOGENOUS FACTORS

#### I. Physical Agents:

(a) Trauma is rarely, if ever, the cause for the development of a carcinoma of the lung. Probst collected only 9 cases from the literature in which the tumor appeared after a single trauma.

(b) Dust and smoke, especially coal and quartz dust, which produce an anthrakosis and chalikosis of the lung with resulting chronic interstitial pneumonia and a chronic bronchitis with secondary regenerative metaplastic changes and proliferations of the bronchial mucosa and alveolar epithelium are considered by many as etiologically important factors and are regarded by them as those causative agents which are responsible for the recent marked increase in frequency of these tumors because the production of smoke and dust has grown considerably in the big cities during the last two decades (Rostoski, Saupe and Schmorl, Hampeln, Schmidt, Ewing, Brandt, Ferenszy and Matolszy, etc.) The higher frequency of lung carcinomas in horses and dogs which are exposed to the inhalation of dust and smoke against that of cattle seems to support this conception. Probst, however, as well as Berblinger, Dynkin, Sachs and others could not state a higher frequency of lung carcinoma in persons which are especially exposed to the inhalation of these substances.

(c) Tobacco smoke is also mentioned among the agents responsible for the production and the increased frequency of these tumors (Seyfarth, Fahr, Heilmann). The frequent occurrence of lung carcinomas among waiters, cigarette workers and members of similar professions and the predominance of these tumors in men who more often indulge in excessive smoking of cigarettes are emphasized by these authors in support of their contention.

(d) Roentgen-rays are also thought of as causative factors (Kikuth). He attempted to correlate the frequent and repeated use of Roentgen-rays for diagnostic purposes in recent times and the increase in frequency of lung carcinomas occurring simultaneously. But he was unable to establish this relation on his own material. As the cause of the well known lung carcinoma of the Schneeberg miners Schmorl considered for some time the emanations of radium in the mine.

#### II. Chemical agents.

(a) Inhalation of vapors of acids and alkalis in chemical plants and laboratories (Kikuth), of poisonous gases (Kraus), of gaseous arsenic compounds (Schmorl) may sometimes represent the causative agent through the production of chronic inflammatory processes in the lung with the resulting secondary metaplastic changes of the bronchial and alveolar epithelium (precancerous disease, Schmorl). Kraus asserted that the increase of lung carcinomas in the post-war period was due to the poisonings with war gases. But this contention could not be substantiated by any other author.

(b) Inhalation of chemical substances with a known carcinogenetic quality as supposed to be present in the air as the dust of tarred roads, oxydation products of gasoline, benzol and lubrication oil of automobiles as an important causative agent received in recent years special attention after Staehelin pointed to the coincidence between the increase in the use of automobiles and tarred roads and the increase of the lung carcinoma during the last twenty years. He supported his conception of the causative interrelation of these two factors with the experimental results of Kimura, who succeeded in producing carcinoma of the lung in rabbits after repeated injections of tar products into the trachea of these animals.

Brandt also reported the production of basal cell proliferations in the mucosa of the bronchi of white mice after instillations of xylol, toluol and distillates of tar. But Staehelin could not demonstrate the correctness of his assumption on his own material. Subsequent investigations showed that the products present in the exhaustion gases of automobiles do not belong to the group of organic carcinogenetic substances. Brandt moreover pointed to the fact that the lung carcinomas in Riga became more frequent at a time when only very few automobiles were there and tarred roads were completely absent, while these tumors showed apparently no increase in France where many automobiles and tarred roads are present. Probst stated that chauffeurs, automobile mechanics, policemen, etc., persons who are especially exposed to the inhalation of these substances, were not more frequently affected than members of other professions. Katz substantiated this observation of his material.

### III. Bacteriotoxic Agents:

(a) Tuberculous processes (cavities) in the bronchial wall are noted as basis for the development of a carcinoma by several authors. Ewing even claims that they are the main source. But the investigations of numerous workers using a large number of cases do not support this view point. Wahl saw only in 9.8 per cent. of cases a tuberculosis of the lung, Kikuth among 246 cases only in two, Brechwaldt among 47 cases only in four, Probst among 76 cases in four and Seyfarth among 307 cases in 6. Also Hochstetter, Ferenczy and Matolcsy do not recognize tuberculosis as a frequent cause of lung carcinomas. Geigel even asserts that tuberculosis protects and fights against the development of a carcinoma of the lung.

(b) Syphilitic scars in the lung, nonspecific chronic bronchitis and bronchiectases act sometimes as basis for a subsequent carcinoma.

(c) Influenza with its inflammatory processes of the bronchi is in more recent time accused as the cause of the increased frequency of these tumors in the years following the last epidemic in 1917-1918. Berblinger, Moise, Laschke are the main supporters of this theory. They founded their assertion on the occurrence of metaplastic changes in the bronchial mucosa after grippe (Askanazy, Schmidtman, etc.), changes which are also seen after measles,

whooping cough, etc. Besides these transformations of normal cylindrical epithelium into a squamous epithelium Brandt saw proliferations of basal cells in chronic pneumonia and actinomycosis of the lung. But the investigations of Kikuth, Seyfarth, Brechwaldt, Hanf and others on their material of recent years and the absence of a similar increase of lung carcinomas after the great influenza epidemic in 1888-1889 and finally the beginning of the increase before the last influenza epidemic do not substantiate the presumptions of the before mentioned authors.

### C. Pathology.

#### (a) Origin.

Carcinomas of the lung may originate from three different epithelial tissues:

1. The cylindrical epithelium of the bronchi.
2. The cylindrical or cuboidal epithelium of the peribronchial mucous glands.
3. The flat, polygonal epithelium of the alveoli.

The bronchiogenic carcinomas represent, according to Kaufmann, the majority, while Langhans asserts that the carcinomas of the peribronchial glands are the most common type. The bronchiogenic carcinomas originate most frequently from a main bronchus and less often from a bronchus of first, second or third order and from the bifurcation (Kaufmann). Wahl stated that among 81 carcinomas 4 were starting from the bifurcation, 33 from a main bronchus and 19 from small bronchi. The origin of the rest could not be determined. Probst noted that 4.5 per cent. of his carcinomas were alveolar carcinomas. If the tumor is in an advanced stage it is frequently impossible to decide its primary focus.

#### (b) Location.:

The majority of the authors state that the right lung is more often involved than the left one (Kaufmann, Probst, etc.). Ferenczy and Matolcsy found a ratio of 169:110 in favor of the right lung, Brandt of 2:1, while Hanf found 95 times the carcinoma in the left side and only 72 times in the right one. Fishberg and Adler could not find a predominance of either side. If there exists a predominance of the right lung it is certainly not a very marked one.

#### (c) Macroscopic appearance:

1. Bronchiogenic carcinomas. Their appearance varies somewhat with their location near



the hilum or more centrally in a lobe. The bronchiogenic carcinomas of the vicinity of the hilum are the most common type. They are soft or hard, white or yellow, irregularly delimited tumors which vary in size from that of a bean to that of a man's head, replacing the normal tissue of a whole lobe. They form either a polypous or papillary node attached with a broad base to the bronchial mucosa, and obturating more or less completely the bronchial lumen or they show a more diffuse growth converting the bronchus into an eccentric thick walled tube with a stenosed lumen. The latter type is not as common as the former one. Several different types of extension of the tumor into the lung tissue can be distinguished. The carcinoma may extend mainly in the peribronchial tissue using the lymphatics in the bronchial wall and transforming the bronchus into a thickened, rigid tube from which it may spread into the interstitial tissue in nodular strands which upon reaching the pleura form flat, diffuse, extensive, firm infiltrations of this tissue. The interstitial carcinomatous infiltrations becomes sometimes so dense that the lung tissue is compressed and finally replaced by carcinomatous tissue. The primarily involved bronchus appears then as a pedicle of the tumor mass. In a second type there exists a diffuse infiltration of the lymphatics which form then a white, delicate network which crosses the whole lobe and is especially well visible in the subpleural tissue. In a third type the tumor spreads diffusely in every direction, forming an irregular mass with the primarily affected bronchus as a nucleus. In advanced cases the whole lobe may represent a grayish red tumor mass from which in rare cases a turbid jelly-like material exudes. Cavity formation follows frequently the blocking or stenosing of the bronchial lumen by the tumor. The blocked bronchial secretion dilates the lumen of the bronchus and secondary inflammatory processes produce an ulceration of the bronchial wall and disintegration of the tumor tissue. The cavity is filled with a gelatinous, mucopurulent or putrid content in which detritus and sequestered pieces of tumor and lung tissue may be present. Gangrene of the lung is not infrequently found as the result of an infection with putrefactive bacteria in the surrounding lung tissue. The second type of bronchial carcinoma is more cen-

trally located and starts from one of the smaller bronchi. It forms a well circumscribed, smaller or larger node which is sometimes surrounded by smaller tumor nodules. Central necrosis in the tumor may result in the formation of a cyst filled with detritus and pus, which may be emptied by expectoration if perforation of its lumen into a bronchus occurs. This type is by far not as common as the first mentioned one.

In the lung tissue surrounding the carcinoma pneumonic processes are often observed. The occlusion of a bronchus by the tumor results in an atelectasis of the corresponding lung tissue with secondary compensatory emphysema of the uninvolved parts of the lung. The emphysema of the healthy lung displaces the heart to the diseased side, if not the formation of an effusion in the pleural cavity of this side prevents this condition, but causes the displacement of the heart to the healthy side. In the course of rapid and marked disintegration of tumor and lung tissue hemorrhages from eroded vessels occur which may become fatal if a larger vessel is opened.

2. Peribronchial mucous gland carcinoma produces a diffuse thickening of the bronchial wall, but leaves usually the bronchial lining intact proliferating mainly in the submucosa. The white or sometimes gelatinous tumor masses cause rather a stenosis than a dilation of the bronchial lumen. Diffuse and extensive infiltration of the parenchyma of the lung occurs as well as marked sclerosis and contraction of the affected lung. Small cystic formations filled with gelatinous material are not infrequently observed.

3. Alveolar carcinoma occurs in three different types, as a single node similar in appearance to the second type of bronchial carcinoma described (Löhlein), or as multiple small nodules (Marchiafava, Hueper, Malassez, Kitzmiller, Briese, Ribbert) or as a diffuse involvement of one or several lobes of the lung (Domeny, Kretschmar, Gordon). The multiple, nodular type which may affect one or both lungs is characterized by grayish, yellow, poorly defined nodules of miliary to hazel nut size, rarely larger size. The center of these nodules shows frequently a cheesy necrosis and the general appearance may not differ from that of a chronic nodular tuberculosis of the lung, especially if a

marked fibrosis accompanies the tumor process. In larger nodules cystic formations may occur due to central necrosis. In the diffuse type the affected part of the lung resembles in appearance that of a caseous pneumonia or a pneumonic lung in the stage of gray hepatization. (Kaufmann.) The consistency is more or less firm and in later stages a marked fibrosis may be present changing the appearance of the tumor tissue to that seen in chronic fibrous pneumonia. In other cases the cut surface may show a certain degree of translucency and a turbid, gelatinous material exudes from the tumor and the surrounding lung tissue where small cystic formations are not rare. (Hueper.) Necroses and cavities are frequently observed. The pleura is usually involved.

(d) Microscopic structure:

The carcinomas of the lung can be differentiated according to their histological structure into two main groups the primary solid carcinomas and the glandular carcinomas. The first group can be subdivided into basal or spindle cell carcinoma, round cell carcinoma, squamous cell carcinoma without cornifications and squamous cell carcinoma with cornifications. The glandular carcinomas subdivided also according to their degree of differentiation are the gelatinous adenocarcinoma, the papillary adenocarcinoma, the adenocarcinoma simplex and the solid adenocarcinoma. Brandt reported that in his series were 22.5 per cent. squamous cell carcinomas, 48 per cent. basal cell carcinomas, 9.5 per cent. differentiated adenocarcinomas and 20 per cent. undifferentiated carcinomas. He asserted that basal cell carcinomas of the lung may also originate from the basal layer of the bronchial and glandular epithelium. Probst found 27.3 per cent. carcinosarcomas among his carcinomas and Brechwaldt 17 per cent. suggesting that the metaplastic changes of the bronchial mucosa produced by the chronic inflammatory conditions following an influenza are responsible for the increase of this type in recent years. Brechwaldt saw 17.2 per cent. squamous cell carcinomas in his series. Ewing noted among the bronchial carcinomas 32 per cent. squamous cell carcinomas, but only rarely the hornified type. Kaufmann stated that the squamous cell carcinomas originate usually from cavities and not from the epithelium of normal bronchi, a statement which does not favor the conclusion of

Probst mentioned above. Wahl remarked that many of the lung carcinomas are undifferentiated ones. Adenocarcinomas may arise as the before mentioned types of primary solid carcinomas from all three epithelial sources of the lung. They are usually composed of irregular glandular formations lined by several layers of cuboidal or polymorphous cells. Ewing stated that the adenocarcinomas of the lung show a marked cellular irregularity in type and arrangement of cells resembling sometimes sarcomas (round or spindle cell sarcomas). The papillary and the gelatinous adenocarcinomas are the more uncommon types. They are as the carcinomas composed of flat, polygonal cells especially rare in carcinomas originating from the alveolar epithelium. In these carcinomas a high cylindrical cell type is found. Typical goblet cells are observed in the lining of the glandular lumina of the gelatinous adenocarcinoma. By merging of several alveoli smaller and larger cysts filled with gelatinous material intermingled with single, clumps and rosette like formations of desquamated tumor cells are formed in this type. In primary alveolar carcinoma the original alveolar structure is more or less preserved. The alveoli are lined by the tumor cells which may fill the alveolar lumina. There is no continuous invasion of the bronchial mucosa by the tumor cells by a replacement of the epithelium of the bronchioli with carcinoma cells. The lining of alveolar walls with tumor cells is also frequently seen in metastatic carcinomatous nodules. But it is rarely the product of a primary bronchial carcinoma (Kaufmann). The spreading of carcinoma cells in the lung occurs by direct infiltration of the surrounding tissue, by way of the air passages, blood vessels and lymphatics.

(e) Metastases.

Through continuous growth carcinomas of the lung may involve the pleura, causing either an effusion or adhesions with subsequent invasion of the diaphragm, ribs and other tissues of the chest wall. On its extension toward the mid-line the carcinoma may spread directly into the peribronchial lymph nodes and those at the hilum, furthermore into the mediastinal tissue compressing sometimes the superior vena cava, into the pericardium and after perforation into pulmonary vessels into the heart (left auricle). Discontinued growths are usually very numerous



and widely spread on account of the ready invasion of the dense network of blood and lymph vessels of the lung. But there exists great variations corresponding to the degree of malignancy of the carcinoma. Lung carcinomas of old persons occasionally produce no metastases, but remain small and localized and are accidental findings at autopsies. Metastases are absent in about 10 per cent. of all carcinomas (Ewing). Probst saw metastases in 81.6 per cent. of his cases, Seyfarth in 75 per cent., Bilz in 88.9 per cent., Redlich in 96.6 per cent. The organs grouped according to the frequency of occurring metastases are as follows: Liver, lung, pleura, bone, kidney, adrenal, brain (35 per cent. Fried), pericard, heart (1.3 per cent. Kikuth), thyroid, pancreas, etc. The frequency of lymph node involvement is as follows: Peribronchial, retroperitoneal, cervical, mediastinal, mesenteric, portal, supraclavicular, inguinal, etc. Sometimes metastases are present only in one organ or organic system (brain, bone, heart, adrenal, etc.).

(f) Duration:

The duration of the carcinomas of the lung varies considerably with the malignancy of the tumor and the resistance of the patient. While most of the authors note a rather rapid course, Kirklin and Paterson state that their course is extraordinarily latent. Ewing quotes a duration from 10 days to four years, and Fishberg one of six months to four years. But these statements are of a rather dubious value because lung carcinomas cause rather often late clinical manifestations and as already stated sometimes none at all. On the other hand there may occur occasionally an acute activation of a lung carcinoma after a pneumonia.

D. *Diagnosis:*

The diagnosis of lung carcinomas is considered as difficult and the correct diagnosis is frequently missed. Grove and Cramer reported correct diagnoses in 33.3 per cent., Wells in 10 per cent., Fried in 57 per cent., Lubarsch and Seyfarth in about 50 per cent. Several factors are responsible for this condition. First numerous diseases of the lung may produce similar symptoms as the lung carcinomas and secondly the symptoms caused by these tumors vary considerably corresponding to the different locations of these neoplasms in the lung, their histological character, proliferative activity, type of local and

general extension, secondary changes in the lung as sclerosis, abscess or gangrene formation, pleural effusion, etc., and metastases alterations in other organs. Sometimes they may not produce any clinical symptoms during life time as especially those of the senile type, or the first clinical symptoms do not emanate from the primary focus but from metastases in distant organs as the brain, the bones, etc. In others the first and sometimes only symptoms are represented by uncharacteristic pains in the thoracic wall, pains similar to those present in intercostal neuralgia. These irregularities in the symptom complex of the carcinoma of the lung account for the high percentage of incorrect diagnoses.

(a) Subjective symptoms.

Cough is one of the first and most common symptoms of lung carcinoma. In the beginning it is usually dry, hacking and may become later productive, especially if cavities or gangrene of the lung exist. A paroxysmal cough of at times agonizing or even emetic character is observed in cases where the carcinoma is proliferating in the bronchial lumen.

Dyspnea is also an early symptom and present in 90 per cent. (Fishberg) of the cases. It is caused by the peribronchial and perivascular carcinomatous infiltration of the lung producing a rigidity of its tissue and compression of the alveoli. Dyspnea is aggravated by obstruction of a large bronchus by tumor invasion or by bronchial compression from the outside. Pleural effusion has the same effect. Dyspnea is sometimes an intermittent condition when the mechanical condition of the air passages change. It may become more severely in the course of the disease and harder to bear and cannot be relieved by rest in bed. Stridor is rare and occurs only in a late stage.

Pains in the chest are an early and main symptom. They are present in 90 per cent. (Fishberg), to 50 per cent. (Brandt). They may be continuous or paroxysmal in character. The intercostal neuralgic type is the most common one. They radiate often into the shoulder and the arm of the affected side. Pains in the left side may be due to pressure of metastases upon the brachial plexus. Pains in the right costal and lumbar region are caused sometimes by metastases in the liver. The pains become in general more severe when the patient is lying on the involved side.

Fever is present in only 25 per cent. (Brandt) of the cases and due to a secondary infection of the lung by microorganisms. It is usually of a subfebrile type. High temperatures are present if complications as abscess or gangrene of the lung exist.

Night sweats are not rarely observed.

(b) Objective symptoms.

Cyanosis and edema of the face and neck are present in 50 per cent. at an early stage. Compression of the superior vena cava is responsible for this condition if it is bilateral; compression of the innominate vein produces an unilateral effect. Absence of pulsation in the congested large veins of the neck is seen if thromboses exist. Sudden attacks of cyanosis accompanied with small, irregular, rapid pulse occur sometimes and are caused by cardiac metastases. Superficial ectatic veins appear not infrequently on the chest, arms and lateral to the spine in the back. Acrocyanosis as well as clubbed fingers are observed in 25 per cent. (Fishberg). Clubbed fingers appearing in middle aged persons point to the presence of a carcinoma of the lung. Pressure of the tumor on nerves may result in inequality of the pupils and paresis of the recurrent nerve (in 6 per cent.). Other nervous symptoms may be caused by metastases in the central nervous system.

Cutaneous hyperesthesia is commonly found in the lumbar region. Palpatory tenderness of bones, especially of the ribs and sternum, point to the presence of metastatic growths in their organs. Enlargement of the superficial lymph-nodes is not common. They are firm nodules.

Bulging of the fossae supraclaviculares is occasionally observed. Cachexia represents a condition of the late stage and may be very marked in senile persons, being sometimes the only symptom of the existing malignancy. It is not generally present (Wahl).

Chest findings: The findings obtained by a physical examination of the chest depend upon the character and type of growth. The carcinomas of the lung may be classified from a clinical standpoint into four groups:

1. The pulmonary, nodular, productive type
2. The pleural type.
3. The pulmonary, disintegrating type.
4. The multiple, small nodular type.

The pulmonary, nodular, productive type is

represented by those carcinomas of the lung which form more or less solid, nodular masses which are the focus for an infiltrative, peripheral growth. On percussion a limited area is obtained which emits a characteristic flat note as found upon percussion of muscle tissue. The pleximeter finger feels a sense of resistance. The area extends either from the inner part of the supraclavicular fossa under the sternum or more commonly from the region below the clavicle to the sternum. Breath sounds are absent. These symptoms are produced by carcinomatous infiltration of the lung tissue and stelectasis. They are usually only observed on one side. Tubular or amphoric sounds are heard near the sternum and in the interscapular space originating from bronchi with infiltrated, rigid walls.

2. Pleural type is present in about 50 per cent of the cases. Above the area of complete dullness due to the cancerous effusion a zone is present which emits a flat note on percussion resulting from the presence of atelectatic and infiltrated lung tissue. Râles are absent in this zone. The fluid fills often the whole pleural cavity. Displacement of the mediastinum is rare, if existing, it is usually to the affected side. The heart is in general in normal position.

3. The pulmonary, disintegrating type is not very common. This form of pulmonil carcinoma is characterized by the formation of cavities due to disintegration of tumor and lung tissue. Sooner or later there is an abundant, fetid sputum present. Hemorrhages are frequent and high fever and profuse sweating usually accompany this type. The temperature has often an intermitten, septic character. The physical findings resemble those observed in abscess or gangrene of the lung. The diagnosis is difficult.

4. The multiple, small nodular form of lung carcinoma is very rare and offers great difficulties in diagnostic respect. The consideration of the general aspect as rather rapid course, cachexia, neuralgic pains, etc., and the results of a Roentgen-ray examination may help to establish the correct diagnosis. Roentgen-ray examination of the chest may show sometimes a marked discrepancy between the size of the tumor in the Roentgenogram and the extent of the physical symptoms, which are found over a larger area on account of atelectases. It may be noted that the presence of an effusion interferes with the



proper interpretation of the lung findings. It has to be removed before the pictures are taken. The establishment of a pneumothorax which is sometimes prevented by the presence of adhesions may improve the demonstration of the lung tumor in the roentgenogram. By the injection of iodized oil into the bronchi obstruction of the bronchi by tumor growth can be visualized. The presence of extensive calcifications in the Roentgen-ray pictures of the lung do not support the diagnosis of a carcinoma of the lung.

In the nodular type the tumor appears as an irregularly outlined area of homogeneous density. The density does not increase toward the margin and extends infiltratively into the surrounding tissue. In cases where a whole lobe is affected the consolidation appears as a homogeneous density not as marked as that of fluid, without any mottling nor with varied texture. The edge is irregular and shows peripheral infiltration into the healthy parenchyma. Carcinomas originating from the bronchial mucosa in the vicinity of the hilum appear as irregular densities in this region from which a bronchial tree of increased density radiates.

Bronchial tumors may be sometimes demonstrated with the bronchoscope.

#### Laboratory findings:

Sputum varies in appearance and amount. It may be mucoid, purulent or sanguinolent. A sanguinolent sputum which may contain red streaks, or which may be rust brown or have the appearance of raspberry jelly, only rarely is seen early in the disease, while it is present in 60 per cent. (Fishberg) during the late stage. A transitory hemoptysis is more characteristic of primary lung carcinoma than a continuous one. Fat globules which are according to Lenhartz indicative of carcinoma of the lung, are also found in the sputum in other diseases. Acid fast bacilli may occur in the sputum if lung gangrene complicates the tumor. They are saprophytic bacilli. (Muir and Ritchie.) A copious sputum appears usually only in a late stage and may be malodorous at times. It originates from cavities. Effusion: Pleural effusion is present in about 50 per cent. It may be serous, purulent or bloody. A purulent fluid is observed in 19.9 per cent., and a hemorrhagic one in 29 per cent (Fishberg), but the latter may exist only transitorily.

Blood: A leucocytosis with myelocytes and myeloblasts points to the presence of bone metastases.

Histological examination: The sediment of sputum or pleural effusion can be used for histological examination for tumor tissue. Krampf reported that only in one of 26 cases the diagnosis could be made from a histological examination of the sputum, because only in advanced cases when larger clumps of tumor tissue are expectorated this diagnostic procedure may be successful; necrosis and disintegration of the tumor material usually interfere with the success of this method. Fishberg, however, asserted that a correct histological diagnosis was obtained in 70 per cent. from the histological examination of the sediment of pleural fluid. During a bronchoscopic examination tissue may be removed for a histological examination. Sometimes an exploratory thoracotomy which Lenhartz recommends as a diagnostic procedure as easily done as an exploratory laparotomy may offer the opportunity for the removal of tissue. E. *Therapy:*

The therapy of the lung carcinomas is extremely unsatisfactory. The Roentgen-ray treatment has only a restricted value, because it impairs only temporarily the tumor growth. Only the great minority of carcinomas of the lung can be operated on. The diffuse and bronchiogenic carcinomas of the vicinity of the hilum have to be excluded from surgical procedures. The best chance for operation offer the well circumscribed, intralobular carcinomas. According to Lenhartz three different operations may be performed. 1. The tumor cavity may be opened after a thoracotomy, the disintegrated tissue removed and a thorough scraping of the wall done. Cures are not obtained with this method. 2. In carcinomas which have involved the chest wall several ribs and a part of the lung are removed. Recurrences follow always this procedure. 3. The tumor is completely removed with sufficient surrounding apparently healthy tissue. If necessary a whole lobe or whole lung may be extirpated. This method represents the only way to success. Sauerbruch, Lenhartz, Wolfsohn and others have used this technic, but rarely with good end results.

#### F. *Prophylaxis:*

Considering the discouraging results of the

therapeutic procedures the prophylaxis of lung carcinomas gains in importance.

Heilmann proposes to this end the removal of dust and oxydation products of coal, gasoline, lubricating oils, tar and similar substances from the air, because they are apparently the cause of chronic irritations of the bronchial and alveolar epithelium resulting in precancerous lesions.

#### G. *Prognosis:*

It is evident from the discussion above that the prognosis of carcinomas of the lung is almost invariably fatal. Only cases which are early diagnosed and have intralobular, well circumscribed tumors have a chance to be cured by operation.

#### H. *Differential Diagnosis:*

Numerous pathological conditions of the lung have to be considered in the differential diagnosis. Primary benign tumors of the lung, secondary malignant tumors, mediastinal tumors, dermoid cyst of the lung, ecchinococcus cyst, tuberculosis, syphilitic gumma, actinomycosis, abscess, gangrene, bronchiectases, chronic indurative pneumonia, adhesive and exudative pleurisy, advanced chronic congestion, pneumokoniosis, foreign body in bronchus constitute the long list of diseases which may produce more or less similar symptoms as primary carcinomas of the lung.

### DIABETES MELLITUS IN TWINS

Allen H. Bunce and Mark S. Dougherty (*Journal of the American Medical Association*, 92:52 Jan. 5, 1929)

A review of all the cases of diabetes mellitus in twins thus far reported fails to reveal any extraneous etiologic factor. However, the disease usually develops in twins simultaneously and runs the same clinical course. The occurrence of a disease in identical twins would seem to indicate some inborn or hereditary constitutional factor, while the development of a disease in one twin and not in the other would seem to indicate some other etiologic factor.

### CALORIGENIC ACTION OF EPINEPHRIN

S. Soskin (*American Journal of Physiology*, 83:162, December, 1927)

Epinephrin causes a marked rise in the oxygen consumption and a significant increase in the R. Q. of normal dogs. In eviscerated or hepatectomized dogs, epinephrin does not prevent the usual decline of the oxygen intake, or show any significant influence on the R. Q. In depancreatized dogs, epinephrin causes a definite rise in the oxygen intake, but no significant change in the R. Q.

The carbohydrate plethora, caused by epinephrin in the normal dog, is not the essential cause of the increased metabolism which follows its administration. Insulin bears no direct relationship to the calorogenic action of epinephrin. The calorogenic action of epinephrin does not depend on direct stimulation of tissue cells, the presence of the liver being necessary for such an effect.

### ACTION OF LIVER THERAPY IN PERNICIOUS ANEMIA

A. Neumann (*Med. Klin.*, 24:1822, 1928).

A 63 year old patient with 1,600,000 erythrocytes and 55 hemoglobin index (Sahli) was treated with a proprietary remedy for anemia. The erythrocyte count rose to 3 million and the hemoglobin index to 80 under this treatment. Since a further rise was not to be obtained, however, liver therapy was used. The hemoglobin rose to 108. The patient gave the impression of an existing polyglobulia. The development of a condition resembling polyglobulia following liver diet leads to the question whether the unrestrained and unselected liver diet is always harmless. Walterhöfer recently reported a case in which a cirrhosis developed during liver therapy. The author believes that caution is necessary in the use of liver therapy.

### MUSCLE CHEMISTRY UNDER THE INFLUENCE OF INTERNAL SECRETIONS AND POISONS

H. Handowsky (*Pflüger's Archiv. f. d. ges. Physiol.*, 220:784, 1928).

A special influence is to be ascribed to the suprarenals of male animals according to the author's experiments. In the muscles of male animals, the equilibration of glycogen destruction and resynthesis is regulated through antithesis of substances from the suprarenals and the testis, in that under the influence of the suprarenals the glycogen decomposition, under the influence of the testis, the resynthesis or process of recovery is forwarded. Also the muscle action of Saponin in chronic treatment must be regarded as being regulated through endocrine glands.

### CONCERNING PERIODIC HYPOTHYROIDISM

R. Bing (*Endokrinologie*, 2:321, 1928).

The author reports concerning 5 cases which represent the periodic forms of beginning hypothyroidism. The patients (female patients throughout) had objective manifestations and subjective complaints in the post menstrual period or also in the interval, which reacted promptly to thyroid medication. If thyroid therapy was discontinued by way of experiment the manifestations of a post menstrual thyroid insufficiency again appeared. Such cases, according to Hedinger, speak as an experiment for the correctness of the assumption that the thyroid exhibits an increased function at the time of menstruation. The disease picture vanishes completely or (in one patient) partly following thyroid medication.



# ARTIFICIAL INSEMINATION BY WAY OF THE OVARIAN BURSA IN THE GUINEA PIG

G. Lombard Kelly, Charles B. Fulghum, Thomas W. Goodwin and William Albert Todd (Surgery, Gynecology and Obstetrics, 48:200, February, 1929)

Artificial insemination by way of the ovarian bursa in the guinea pig can be accomplished in about two-thirds of the trials, if the females are selected during the first stage of estrus and a suitable technic is employed. The young born are normal in every way and thrive just as the progeny of natural insemination. It is possible by this method to produce young born at the same time from one mother but with different fathers.

This method opens up a new pathway of investigation into the behavior of the spermatozoa in relation to the ovum and to the uterine tube.

# BENIGN ENLARGEMENT OF THE PROSTATE S. A. R. Nitch (British Medical Journal, 3551:139 Jan. 26, 1929).

It is generally agreed that enlargement of the prostate is due to an adenomatous formation, but the actual origin of the adenomata is as yet unsettled. In the pathological prostate the enlargement is essentially glandular, hence the term hypertrophy which is sometimes used to describe the condition is incorrect. Hypertrophy of an organ implies an increase in size of all its component parts. Whenever possible, prostatectomy is the best treatment for benign enlargement of the prostate causing symptoms.

# CONCERNING THE TREATMENT OF DIA- BETES INSIPIDUS WITH PITUITRIN SNUFFING POWDER

Alderberg and Porges (Wiener klin. Wochenschr., 41:1467, 1928)

Contribution concerning two cases which received pituitrin power endonasally. From the course of both cases it may be seen that the snuffing of post-pituitary powder completely sets aside the symptoms of genuine diabetes insipidus and can be used continuously. Since the pituitrin injections hitherto used in diabetes insipidus produced disagreeable secondary effects, which remain entirely absent with snuffing in suitable dosage, this comfortable and quite harmless method of application makes possible a prolonged treatment of this disease and must accordingly be designated as a method of choice.

# MOTHER GOOSE REVISED

There was an old woman who lived in a shoe,  
And she was an expert at making home brew.  
"It's no trick to make it," she told one and all  
Of her neighbors who eagerly paid her a call.

JOHN KELLEY.

# TREATMENT OF URTICARIA OCCASIONED BY INJECTIONS OF SERUM BY MEANS OF PANCREAS SUBSTANCE

A. Legrand (Bull. med. 42:1238, 1928)

It is assumed that the urticaria which is occasioned by injections of serum originates through the passing over of hetero-albumins into the blood of persons with pancreas insufficiency. Supported by experiences and observations which he has made in alimentary urticaria, the author arrived at the conclusion that in the treatment of urticaria following injections of serum, the administration of pancreas substance is necessary.

# ANNUAL MEETING OF THE CENTRAL STATES PEDIATRIC SOCIETY

The fourteenth annual meeting of the central states Pediatric society will be held at Milwaukee, September 27 and 28, 1929.

For official program of the meeting communicate with Dr. A. L. Kastner, chairman of arrangement committee, 120 East Wisconsin avenue, Milwaukee, Wisconsin.

# A FOOL IN THE MARKET

Bill Brown bought stocks when they were low,  
And sold them out when they were high.  
Who would get rich has but to know  
Exactly when to sell and buy.  
Bill Brown is now a millionaire  
While I have not a dime to spare.  
The difference, I'd have you know,  
I bought 'em high and sold 'em low.

Bill Brown made money out of "grape."  
He bought his shares at twenty-three,  
The figures climbed upon the tape.  
"At ninety-four I'll sell," said he.  
I bought some shares at ninety-four,  
Believing that they still would soar.  
The shares Bill had belong to me—  
They're quoted now at twenty-three.

If I but knew when low is low  
And I could sense when high is high,  
Then when to sell my stocks I'd know  
And also when to rush to buy.  
The difference is slight you see,  
But oh, it means so much to me!  
I seem to be the ne'er-do-well  
Who buys when wise men start to sell.

EDGAR A. GUEST.

# ADVERTISING SUGGESTIONS

From Republican-Press, official paper of Buena Vista County, Ia., via Helper.

GET BABY READY FOR COLD WEATHER  
—To Make Them Is Foolish Economy When  
You Can Buy Them for Less Than Materials  
Cost. A Complete Assortment Now on Display.  
WOMAN'S SHOP.

## Society Proceedings

### Adams County

The regular monthly meeting of the Adams County Medical Society was held in the hall on the ninth floor of the W. C. U. Building, September 9, 1929. The meeting was called to order by the President at 8:15 P. M. Thirty-two members and Drs. Lloyd Arnold of Chicago, and Thomas G. Hull of Springfield were in attendance.

Dr. Thomas G. Hull, Chief of Laboratories of the State Department of Public Health, read an interesting paper on "Bacteriophage—Its Nature and Mode of Action." He was followed by an unusually interesting address by Dr. Lloyd Arnold of Chicago, Prof. of Bacteriology and Preventive Medicine, University of Illinois College of Medicine, on the "Therapeutic and Prophylactic Properties of Bacteriophage." These papers were discussed by Drs. Cohen, Wells and Miller, the discussion being closed by Drs. Arnold and Hull.

HAROLD SWANBERG, *Secretary*.

### Coles-Cumberland County

The Coles-Cumberland County Medical Society held its bi-monthly meeting, September 18, in the U. S. Grant Hotel, Mattoon, Illinois. Dinner at 7:00 p. m. followed by an address by Dr. Clifford G. Grulee of Chicago. His subject was "The Care and Feeding of the New Born Baby." He brought out many new and practical points in the care of the infant that could be readily used by the general practitioner in rural communities and small cities.

There were fifty-three doctors present including Dr. Cleaves Bennett, Counselor of the Eighth District, and all present considered this one of the best meetings ever held by this society.

We have a real live organization for a down state society and our meetings have an average attendance of thirty from a membership of forty. Every practicing physician in Coles County is a member of this society, who is eligible. Our meetings are held bi-monthly, alternating between Mattoon and Charleston. There is a fraternal and brotherly feeling existing between the members of this society that is not usually found in other organizations. We are a real help to each other, there is very little professional jealousy in this society.

C. E. MORGAN,  
President.

E. E. RICHARDSON,  
Secretary.

## Marriages

ROY S. BARNSBACK, Edwardsville, Ill., to Miss Mabel G. Lawder, at Kansas City, Mo., August 31.

MICHAEL WILLIAM FIELDING, Springfield, Ill., to Miss Edith Oram of Watseka, June 29.

ROLAND P. MACKAY, Chicago, to Miss Margaret Pomroy, at Rochester, Minn., July 31.

GEORGE C. MCGINNIS to Miss Josephine Hilliard, both of Freeport, Ill., June 6.

JOHN S. PEREKHAN to Miss Mildred Fox, both of Chicago, September 5.

## Personals

Dr. Jesse M. Hoyt, Nokomis, has resigned as district health inspector with the state health department.

Dr. William A. Stoker has tendered his resignation as managing officer of the Kankakee State Hospital to Governor Emmerson.

Dr. Samuel A. Levinson has been elected president of the Chicago Tuberculosis Society for the ensuing year.

Dr. Harry M. Hedge, Chicago, addressed the Iroquois County Medical Society, September 19, on "Some Common Skin Diseases."

Dr. Otis O. Stanley, Decatur, has been elected president of the Mason County Tuberculosis and the Visiting Nurses' Association for the ensuing year.

The Whiteside County Medical Society, Sterling, was addressed, September 27, by Dr. Eugene B. Perry, Chicago, on "Results of Obstruction of the Lower Urinary Tract."

Dr. Ione F. Beem has been made president of the Medical Women's Club of Chicago for the ensuing year, and Dr. Marian S. W. Bougher, president-elect.

The Rock Island County Medical Society was addressed, September 15, by Dr. William L. Brown, Chicago, on "Therapeutic Principles Involved in the Use of Radium and the X-Ray."

Dr. Clement L. Martin, Chicago, addressed the Marion County Medical Society, Salem, August 30, on "Treatment of Hemorrhoids by Nonsurgical and Operative Methods."

Dr. Robert M. Hathaway has resigned his position with the Pulaski County Health Department after several years' service, and will engage in practice in Hamilton.

The Madison County Medical Society was addressed at its annual banquet at Alton, September 6, by Dr. Amand N. Ravold, St. Louis, on "Origin of Gallstones."

The Clinton County Medical Society, Carlyle, was addressed, September 10, among others, by



Dr. Ethel R. Harrington, Chicago, on "Maternal and Infant Hygiene Problems."

Dr. Rush E. Castelaw, Kansas City, Mo., has been appointed superintendent of the Decatur and Macon County Hospital. Dr. Castelaw for twelve years was head of the Wesley Hospital in Kansas City, having retired from that position last June.

Dr. William J. Hickson, for about sixteen years head of the psychopathic laboratory of the Municipal Court of Chicago, has resigned. Dr. Meyer Solomon, associate in neurology, Northwestern University Medical School, has been appointed acting director pending the selection of Dr. Hickson's successor.

Dr. Anny M. Petersen Saunders is spending some time at the Wagner Jauregg Klinik in Vienna this summer.

Dr. H. L. Davis of Rockford, was elected surgeon general of the United Spanish War Veterans at the national encampment, held at Denver, Colo., Sept. 8 to 11.

Governor Emmerson has appointed Dr. Charles J. Carlin, Joliet, physician to the old state penitentiary in that city to succeed Dr. John Shutack and has appointed Dr. Oscar J. Hagebush, Ashley, as managing officer of the Anna State Hospital.

Dr. Gladys R. H. Dick addressed the Henderson County (Ky.) Medical Society, recently, following a trip to Berea in connection with the recent immunization of students during an outbreak of scarlet fever.

Dr. Phillip S. Waters has been appointed managing officer of the Alton State Hospital, succeeding Dr. Joseph H. Ellingsworth, resigned. Dr. Waters was formerly assistant managing officer of the hospital.

Dr. Esmond R. Long, professor of pathology, University of Chicago, has been appointed editor in chief of the *Journal of Outdoor Life*, which is published by the National Tuberculosis Association.

The state board of medical examiners, comprising Drs. Malcolm L. Harris, Gilbert Fitzpatrick, Wilbur H. Gilmore and Arthur H. Geiger of Chicago, and John R. Neal, Springfield, has been reappointed for another term.

Dr. Robert A. Strong, of Pass Christian, Miss., formerly professor of clinical pediatrics in Tulane University School of Medicine, and

since 1923 editor of the *International Digest* of Hagerstown, Md., has recently been appointed professor of pediatrics and head of the department of pediatrics, vice Dr. L. R. DeBuys resigned. He will continue as editor of the "Digest" during his service at Tulane.

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## News Notes

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The Schuyler County Medical Society held a special meeting, September 26, at Rushville, to which physicians of Illinois, Iowa and Missouri were invited. The guest speakers included Dr. William D. Chapman, Silvis, president-elect, Illinois State Medical Society, on obstetrics, and Dr. James H. Hutton, president-elect, Chicago Medical Society, on "Endocrine Disturbance Occurring in General Practice."

The Illinois Conference on Public Welfare will give eight short courses of instruction for social workers during the annual meeting of the conference at Evanston, October 28-29. Among the subjects will be "Family Relationships in Mental Hygiene," "Fundamentals of Child Health" and "Legal Aspects of Social Work." Applications should be addressed to Mary E. Murphy, 848 North Dearborn Street, Chicago.

Loyola University has by affiliation assumed teaching control in St. Anne's Hospital, 4900 West Thomas Street, and St. Elizabeth's Hospital, 1433 North Claremont Avenue, the combined capacity of which is 500 beds; Loyola will also be responsible for the new Lewis Memorial Maternity Hospital, Thirtieth Street and Michigan Avenue, which will provide special work for students in obstetrics and pediatrics.

In the last seven years, accidents killed more people in Illinois than were killed in action in the army of the United States in the World War. The state health department says that only three diseases cause more deaths in Illinois than do accidents. Attention centers around automobile accidents, but the fact is that the toll from all other accidents combined is more than double that for automobiles. Drowning cost Illinois last year 383 lives; burns, 302; explosion of firearms, 133, and falls, 961. Accidental deaths in Illinois in 1928 totaled 4,460 males and 1,490 females; they increased 24 per cent from 1922 to 1928.

The most favorable maternal mortality rate ever made in Illinois (5.1 per thousand confine-

ments), the state health commissioner reports, was that of last year, when only one out of each 200 mothers died as the result of childbirth. Childbirth complications, even so, caused the deaths of 694 mothers in 1928, and 418 of them resulted from preventable causes. Puerperal septicemia was responsible for 237. The number of confinements in the state was 134,346, among which were 4,678 stillbirths. The maternal mortality rate in 1928 was 43 per cent below that for 1918.

The National Safety Council held its annual safety congress at the Stevens Hotel, Chicago, September 30-October 4. The program of the education division and several cooperating organizations, Tuesday morning, included, among others, addresses by Dr. Arnold H. Kegel, city health commissioner, on "Relationship of Defects in Children to Accidents," and Herman J. Norton, supervisor of health and physical education, Rochester, N. Y., public schools, "Minimum Essentials of a Safety Program." Tuesday evening, "A Pilgrimage to Safety" was given by the Children's Civic Theater of Chicago, under the direction of Miss Irene A. Skinner; Wednesday morning, J. C. Wright, director, Federal Board of Vocational Education, spoke on "Training Workers for Safety in Industry." The complete program of the congress embraced 135 meetings of sections, special groups and general sessions.

A banquet for visting Fellows of the American College of Surgeons will be given by the women physicians of Chicago at the Chicago Woman's Club, 66 East 11th Street, Wednesday, October 16, 1929. Reception 5:30. Dinner 6:00 (sharp).

## Deaths

ELMER HOWARD BEST, Freeport, Ill.; Rush Medical College, Chicago, 1888; city health officer; served during the World War; on the staff of the Evangelical Deaconess Hospital; aged 64; died, July 3, of heart disease.

HENRY GOODRICH DAVIS, Monroe Center, Ill.; Hahnemann Medical College and Hospital, Chicago, 1883; aged 68; died, August 20, of chronic myocarditis.

ALBERT GOLDSPOHN, Naperville, Ill.; Rush Medical College, 1878; a student at several German Universities, 1885-1887; professor of gynecology in Post-Graduate Medical School and Hospital, 1892-1922;

attending surgeon, German Hospital, 1888-1904; surgeon in chief, Evangelical Deaconess Hospital, 1905-1922; a Fellow of the American College of Surgeons; Fellow, A. M. A.; a benefactor of North Central College, Naperville, and donor of Goldspohn Science Hall to that institution; in active practice until his retirement and removal to Naperville in 1925; aged 77; died, September 1.

LOUIS ALEXANDER GREENSFELDER, Chicago; Chicago Medical College, 1887; formerly professor of surgery, Rush Medical College; member of the American College of Surgeons; served during the World War; senior attending surgeon to the Michael Reese Hospital; aged 62; died suddenly, August 15, of heart disease in New York, while en route from London to his home in Chicago.

NEAL J. HALL, Fairfield, Ill.; Missouri Medical College, St. Louis, 1878; aged 78; died, August 8, as the result of a cerebral hemorrhage.

EDWARD B. HOLDEN, Chicago; Rush Medical College, Chicago, 1889; aged 61; died, August 17, of angina pectoris.

ELIZA JANE HYNDMAN, Bloomington, Ill.; Northwestern University Women's Medical School, 1897; a practitioner in Bloomington 30 years; aged 79; died, August 24; in Blessing Hospital, Quincy, following a long illness.

JOHN B. S. KING, Glenview, Ill.; Hahnemann Medical College and Hospital, Chicago, 1883; aged 74; died, August 28, of heart disease.

DANIEL R. PETERS, Clayton, Ill.; Keokuk Medical College, Physicians and Surgeons, 1906; a practitioner in Brown County since graduation; aged 53; died, July 22, following a long illness in a hospital in Jacksonville.

MEREDITH D. PUGH, Lincoln, Ill.; Chicago Homeopathic Medical College, 1901; aged 52; died, July 1, at the Evangelical Deaconess Hospital, of jacksonian epilepsy.

JOHN CHARLES STAMM, Oak Park, Ill.; Rush Medical College, 1889; a practitioner for 40 years in Oak Park and Chicago; aged 60; died suddenly near Joliet, September 2, while motoring home after a visit in Missouri.

ELMER ELLSWORTH SCHWARTZ, Oak Park, Ill.; Jenner Medical College, Chicago, 1911; aged 63; died, September 1, of carcinoma.

ROLAND JAMES STIVER, Freeport, Ill.; Rush Medical College, 1889; a practitioner in Stephenson County at Lena for over 20 years and since 1913 in Freeport, aged 71; died, August 24, after a long illness.

GEORGE BOWER TOPE, Downers Grove, Ill.; Rush Medical College, Chicago, 1896; on the staffs of the West Suburban Hospital, Oak Park, and the Hinsdale (Ill.) Sanitarium; aged 54; died, September 2.

OSCAR FITZGERALD WILSON, Waynesville, Ill.; University of Michigan Medical School, 1885; aged 68; died suddenly, August 27, having retired from practice three years ago on account of illness.



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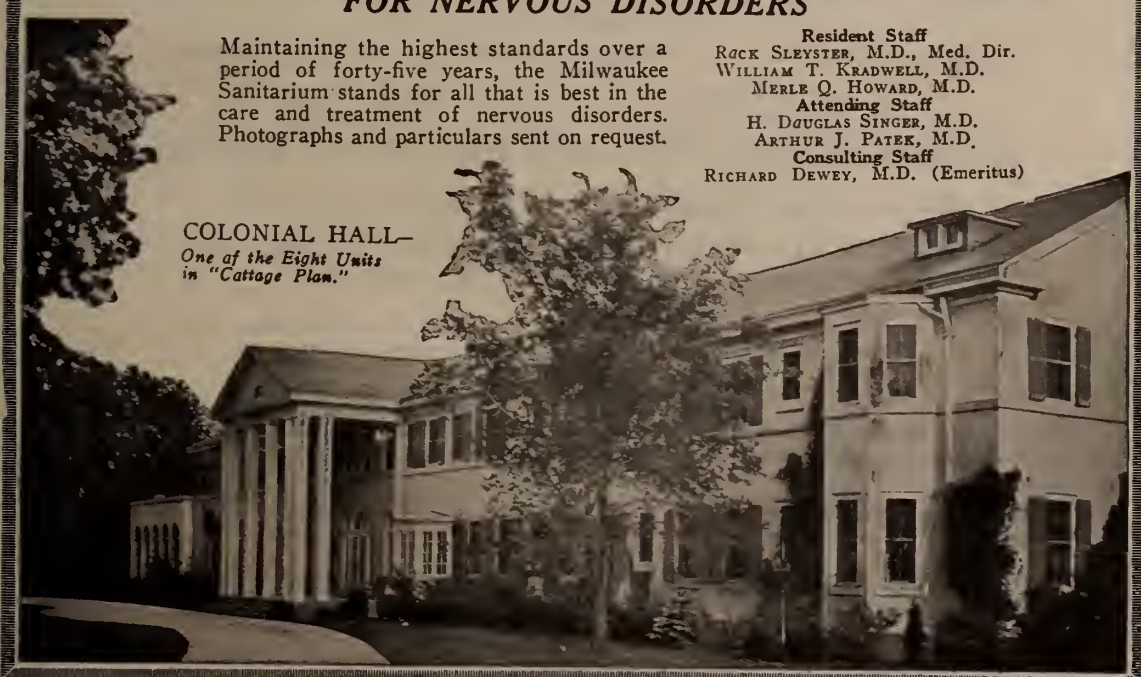
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# ILLINOIS MEDICAL JOURNAL

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State Society will pay no bills for legal services except those contracted by the Committee. Notify the Chairman at once. Do not employ attorneys.

Send original articles, advertising copy, cuts and all communications relating to advertising to Dr. Charles J. Whalen, c/o Illinois Medical Journal, 185 N. Wabash Ave., Chicago.

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## Editorial

THE VALUE OF MEMBERSHIP IN ORGANIZED MEDICINE. THIS IS APPARENT IN THE OUSTER OF DOCTOR LOUIS E. SCHMIDT FROM CHICAGO MEDICAL SOCIETY

PRICELESS ASSET OF MEMBERSHIP IN CHICAGO MEDICAL SOCIETY AND ILLINOIS STATE MEDICAL SOCIETY IS A PRECIOUS TREASURE ABOVE AND BEYOND THE MANIPULATION OF LAY DICTATION, AND VIOLATORS OF ORGANIZED MEDICINE'S CODE OF ETHICS DISCOVER TO THEIR SORROW THAT "VERILY, THERE ARE THINGS BEYOND PRICE"

That tenacity with which Dr. Louis E. Schmidt strives to regain membership in those reputable medical societies that have ousted him on account of his ethical transgressions. partakes little of the dignified repentance of a skilled scientist, cognizant of the error of his ways, and willing and eager to cry "Mea culpa, mea maxima culpa."

Rather in insolent, defiant determination, would those attempts be characterized as more indicative of the hysteria of a spoiled, self-willed child, suddenly thwarted in its desires.

Lay organizations and individual citizens of wealth and influence invoked to wield the "big stick" impudently over the heads of the ethical medical profession are due for sad and certain shock. Lightly as these "big stickers" may esteem ideals in the abstract, it would seem that eventually they will find that ethics and honor are not commodities to be bought and sold over a counter or dried, salted, and pickled as a prize in the market place.

### WHAT PRICE ETHICS?

More than all the billions of big business can bring to bear!

It has been definitely stated that a few in-

fluential commercial lay organizations and individuals have expressed the intention of "forcing" the Chicago Medical society to re-instate Dr. Louis E. Schmidt as a member in good standing.

Announcement of such coercion is interesting from the standpoint that this pronouncement shows exactly how thoroughly this country is under the thumb of bureaucratic control, and how far a certain proportion of lay organizations has progressed along the way of writing prescriptions and making diagnoses in cases of illness. For years this JOURNAL has been warning the medical profession of the status of inferiority bestowed upon it by that group of citizenry whose service is to Mammon rather than to mankind. Action like that intimated in the Schmidt case brings home the argument clearly and sharply. Not only is such attempted coercion a direct violation of the constitution of the United States in point of individual rights, but it is further an illegal attack upon professional group independence.

If an executive of a large industrial corporation should be discharged by the governing board of that organization for a direct violation of one of the ethical rules of that business, would that governing board tolerate for one instant an organized medical society's demand, not request, but demand—for the re-instatement of the individual at fault?

If these lay organizations and wealthy citizens should decide to boycott the medical profession of Chicago and of Illinois because ethical medicine has debarred a man from fraternity and membership because of his infractions of the rules of ethics an extraordinary situation will result. Such action will refuse to the medical societies that privilege of selection accorded any reputable club in the country—of asking for the resignation of a member because he has broken one of the by-laws or rules of the club.

The whole thing is too ridiculous to consider seriously save that so many ridiculous things have a habit of garbing themselves in the habiliments of the respectable and the revered. Some even manage to become laws.

On the face of affairs, common politeness would tend to indicate that what an organization does out to one of its members, after due deliberation and long and patient counsel, would be a matter between that organization and the

member in disgrace. In other words, it does not concern big business, or big business men what any fraternity may do to one of its members unless it be their own club or group. What right, what jurisdiction has any lay organization, or combination of lay organizations over the Chicago Medical society or its affiliated professional group? Exactly the same jurisdiction as either or both of these two medical societies have over the Chicago Association of Commerce's decision as to what color of blinds it will put up in its offices, or as to how much Armour & Company shall pay per pound for beef on the hoof.

Certainly when lay organizations band together to "force" the professional societies who put him out, to take back into their bosom the ethically erring Dr. Louis E. Schmidt, let them pause and look the situation squarely in the face. They will begin to see the light. If Dr. Schmidt wants to make himself ridiculous by further flouting ethical medicine he will continue to encourage such mis-directed partisanship by a portion of the misguided laity to his great disadvantage.

It may be emphasized that not until ethical medicine has passed entirely under the thumb of an egotistical laity will that laity be permitted to utter an ultimatum upon what is or is not ethics in medicine.

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#### THE CHICAGO MEDICAL SOCIETY IS IN NO WAY INTERESTED IN A COMMERCIAL ADVERTISING CAMPAIGN

An erroneous impression now floods the lay press to the effect that the Chicago Medical Society is about to enter into a vigorous commercial advertising campaign. This is false as false can be. Dr. Louis E. Schmidt was recently expelled from both the Chicago Medical Society and the Illinois State Medical Society for just such an infraction of the standards and tenets of recognized medical ethics.

An editorial appearing in the Bulletin of the Chicago Medical Society under date of September 21, 1929, through a possible laxity of phrasing so laid itself open to misinterpretation by the laity and subsequently the lay press that to a portion of the general public and even to many of the profession it has appeared that the Society is about to sponsor a commercial ad-



vertising campaign for physicians and surgeons and among the laity, rather than, as it did mean, a campaign of education of ethical medicine among physicians themselves and among the laity.

Unfortunately this unofficial, misleading editorial was hailed by the lay press and by many publicists as the last word on the advertising question and a complete reversal of our medical standards. It has brought to the offices of the A. M. A. and elsewhere a tremendous influx of criticism that at times has bordered upon the inherently vicious. Protests have been both written, printed and verbal.

Let it be stated now, and for all time, that advertising is against medical ethics. The ideals of the Hippocratic oath remain unchanged.

The only advertising in which ethical medicine is interested is that which teaches the general public the ideals, the progress and the skill of ethical medicine. It must be unalterably understood that this advertising will exploit the science and practice of medicine, and not the individual physician under any circumstances.

Never in the councils of the Chicago Medical Society has the question of commercial advertising ever come up for discussion, because every ethical physician is thoroughly aware that such exploitation would never be countenanced by the body professional even if the physician's own personal ambitions should lead him into such misguided desires.

The editorial mentioned in the Bulletin of the Chicago Medical Society, which has been subjected to such distortion in lay hands, expressed the opinion of one man, who, if the truth be told was probably as much surprised as anybody when he discovered the misinterpretation that had been put upon his remarks by the laity.

Medical journals written from a medical standpoint for medical men are just as prone to misinterpretation by the uninitiated as chemical journals written for chemists would be if they were read by outsiders. The appearance of this editorial in the Bulletin of the Chicago Medical Society in no way stamps it as the official opinion of the Chicago Medical Society or any other medical society either in the state of Illinois or the United States. All over this country, in fact all over the civilized world but

one opinion maintains as to the attitude of ethical medicine and advertising. And that opinion is voiced to eternity in the Hippocratic oath.

The whole tempest in a teapot is a warning that under present conditions, doctors today should be very cautious as to what they print or say in public, officially or otherwise. The newspapers of the country are on the alert to pick up any statement that may lend new fire to the Schmidt controversy and reverse the right of medical societies to rule upon the paramount question of what medical ethics is and what ethics is not.

---

#### THE ILLINOIS LAW RELATIVE TO THE ABANDONMENT OF BABIES

*Any person, firm, or corporation, taking a case of confinement into his or her home must be licensed so to do by the state department of public welfare. (Chapter 23, p. 78, Cahill. Illinois Revised Statutes (abstract).)*

The superintendent of child welfare of the State department of Public Welfare writes us as follows:

"First: We find that a number of doctors and a greater number of midwives, especially in the smaller towns, as well as in Chicago, are taking care of confinement cases in private maternity homes, which is not in accordance with the provision in the Illinois Statutes. The law requires that any person, firm or corporation, taking a confinement case into his or her home must be licensed so to do by the State Department of Public Welfare. This policy, therefore, is clearly a violation of the law, and many of the abandoned babies are traceable to such conditions.

"Second: Some doctors and many midwives caring for a confinement case of the illegitimate type are making provision for the placement of babies for adoption into foster homes, without making the required reports to the Department of Public Welfare. This, also, is clearly a violation of the law.

"Third: Some doctors and many midwives in order to be relieved from any responsibility accompanying the placement of an illegitimate child in a foster home, or for its possible abandonment, are advising their patients to leave the hospital, or other place of confinement, with their child, making a direct placement and sign-

ing a formal consent. This practice is merely a technicality in the evasion of the law, requiring that all such placements have the approval of the State Department of Public Welfare."

Mr. Battis believes that such practices on the part of some physicians are not intentional evasions of the law, but are made without a knowledge of the laws of Illinois.

It is hoped that every County Medical Society will discuss this matter thoroughly, and have it brought to the attention of every member of the Illinois State Medical Society, so that physicians may fully cooperate with the State Department of Public Welfare, and help it in minimizing the abandonment of babies throughout the State.

For information concerning these conditions, complete details can be received by writing Roy James Battis, Superintendent of Child Welfare, Department of Public Welfare, Room 530, State House, Springfield, Illinois.

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## PROGRESS OF ACTIVITIES

### EDUCATIONAL COMMITTEE

#### ILLINOIS STATE MEDICAL SOCIETY

Many public speakers and writers are advocating that the medical profession educate the people to seek medical advice to prevent disease rather than to cure it. This is not a new thought. The Illinois State Medical Society at its meeting in June, 1922, passed a resolution to the effect that "The House of Delegates goes on record as endorsing a broad plan of education through pamphlets, addresses and the lay press, any or all, to the end that the public be enlightened on the truths and principles contained in the development, progress and present status of medicine."

So the machinery for bringing this desired program into effect was set up; but it was not until 1925 that real activities in health education were begun. The work of the Educational Committee, appointed by the Council, has resulted in a better understanding between certain lay groups and the profession. The public wants to be educated and is using the various means of securing "health" information offered by the Education Committee.

Read what the public thinks about the talks

that are being given practically every day of the year by representatives of the Committee:

"It is certainly gratifying to a layman to know what the Medical Profession is trying, with all its might, to accomplish for the human race."—President of a club of young business men.

"A most beneficial and interesting talk most ably given. The Medical Society is doing a wonderful work and should be sincerely complimented."—President of a Woman's Club.

"Allow me to express my appreciation, and the same of the teachers of this county, to you for sending Doctor — to lecture to our Institute. It was splendid indeed and well received by 350 public school teachers."—A County Superintendent of Schools.

"This lecture was without a doubt, one of the best we have ever had the privilege of hearing."—President of a Parent-Teacher Association.

"We were very well satisfied with the talks and we certainly thank the Illinois State Medical Society for cooperating with the Home Bureau. I am sure the Home Bureau Women have appreciated this opportunity of hearing these doctors."—County Adviser of Home Bureaus.

"The doctor gave a very splendid address. Every person was much interested and would have sat for another period to listen. Address full of common sense and helpful suggestions."—A County Superintendent of Schools.

Fifty health educational talks were given during the month of October by members of the Speakers' Bureau of the Educational Committee, and 6 scientific programs were arranged for County Medical Societies.

JEAN MCARTHUR,

Secretary.

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## DINNER FOR DR. CHARLES B. REED

On October 11, 1929, the Chicago Gynecological Society gave a dinner in honor of Dr. Charles B. Reed, President of the Chicago Medical Society, who for twenty-five years has been treasurer of the former Society. Dr. William McIlwain Thompson, President, presided.

The grace was offered by Rev. Dr. H. R. Anderson of the Fourth Presbyterian Church. Addresses were given by Mr. Payson S. Wild, Secretary of the Chicago Literary Club, Dr. James



H. Hutton, President-Elect of the Chicago Medical Society, and Dr. Irving Cutter, Dean of Northwestern University Medical School, and Dr. Pliny I. Blodgett, President of the Illinois Chapter of the Isaak Walton League. Each speaker paid tribute to the diversified talents of Dr. Reed.

Three Past Presidents of the Chicago Gynecological Society were present: Henry T. Byford, who was also one of its founders, E. J. Doering and Rudolph Holmes.

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### SECTION ON RADIOLOGY

This section is asking for volunteers for papers on Radiology or some allied subject for the 1930 program. As the time and number of papers are limited, applicants will be considered in the order of their coming as well as the matter and quality of the subject and discussion.

Such communications can be directed to: Dr. I. S. Trostler, chairman, 25 E. Washington St., Chicago, Ill., or to Dr. Henry W. Grote, secretary, Bloomington, Ill.

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### CONTACT WITH LAY GROUPS MADE BY THE EDUCATIONAL COMMITTEE

The Educational Committee of the Illinois State Medical has had a very satisfactory working agreement with some of the important lay groups of the state. A report of these contacts was published in the Illinois State Medical Journal of July, 1929:

"Your committee has been represented at the organization meetings of the Elks Foundation for Crippled Children and satisfactory plans have been set up for crippled children's clinics. The Foundation has definitely stated that these clinics will be held only in counties where the medical society wishes and that no patients will be admitted to these clinics unless accompanied by the family physician or with his consent.

"The Chicago Woman's Club has been especially interested in promoting an educational campaign concerning cancer. The Committee has been represented at the conferences of the Club and when a definite educational program is launched, the Educational Committee will take an active part in promoting intelligent information about cancer.

"The Committee has been represented on the Advisory Council of the Child Hygiene Division

of the State Department of Health. The Council has approved a plan for work in several counties of the state which will require the cooperation of the Medical Society, Dental Society, and certain lay groups. Such a plan of procedure should make for a much better understanding on the part of community groups, relative to certain health problems which may be studied."

Other groups mentioned in this report are the Illinois Federation of Women's Clubs. Hundreds of speakers are sent to the women's clubs over the state. The Chairman of Public Health and Child Welfare of the Federation has worked very closely with the Educational Committee. The Committee cooperated with the Federation in promoting the observance of Health Week and particularly May Day.

The Illinois Congress of Parents and Teachers and the Educational Committee have also worked together during the past few years. The Congress suggested to the local Associations that pre-school children be taken to the family physician for examination and correction of defects. This plan has been worked most successfully and to the entire satisfaction of both parents and physicians.

Cooperation has been given the Chicago Woman's Aid, the Jewish Peoples Institute, the American Public Health Association, the Illinois State Dental Society, The Home Bureau organization of the state, the Farmers Institutes, the Kiwanis Clubs in promoting Boys' Week, the State Department of Health, and the Woman's Auxiliary.

During the month of November many high schools are observing Health Day of American Education Week. Principals from all sections of Illinois are securing speakers from the Educational Committee to give health talks on that day. Similar talks were given to teachers at annual fall institutes.

The South Chicago Y. M. C. A. is giving a series of ten health lectures of interest to the public. Speakers are being furnished by the Educational Committee. Another Chicago Y. M. C. A. has asked aid in securing speakers to give short health talks at noon in 40 large industrial plants of the city.

The Committee has had splendid response from some of the lay-health groups when calls

have been made upon them. Physicians from many different states have called upon the Committee for copies of radio talks, for outlines for popular health talks, and for books of clippings taken from current newspapers and magazines.

Each member of the Educational Committee gives many hours of time to checking over all the press articles before they are released, in making sure that all talks which are broadcast over the radio are suitable for the public and in keeping with the policies of the Illinois State Medical Society. Valuable time is also given in order that representatives of the Committee may meet with representatives of these many lay groups to talk over problems which affect both the medical profession and the public. Hundreds of physicians all over the state are cooperating in every way possible to promote this health education campaign.

JEAN MCARTHUR, *Secretary.*

#### INFANT AND MATERNAL MORTALITY AND THE SHEPPARD-TOWNER ACT

States that rejected the Sheppard-Towner Act would appear to have had better luck in the reduction of infant and maternal mortality than have those states that submitted to this unfortunate measure. Although mortality rates have been on the decrease over a period of years, yet only 12 out of the entire 48 states had a lowered infant mortality in 1928, and of these twelve states five did not work under the Sheppard-Towner Act.

Illinois can congratulate itself with cold, hard statistics that it refused to countenance the Sheppard-Towner Act. In Illinois, where there is no Sheppard-Towner Act, the maternal mortality rate for 1928 was only 5.1 per thousand. California is the only state ranking anywhere near this figure among those states working under the Sheppard-Towner Act, and in California the climate is a factor not to be disregarded.

Altogether the five states working without the Sheppard-Towner Act, — Connecticut, Illinois, Kansas, Maine and Massachusetts have a much lower mortality rate for maternity and infancy, than have those states working under this nefarious and deceptive legislation.

Under date of June, 1929, the *Quarterly Review of Biology* makes comprehensive comment

on the Sheppard-Towner Act. This periodical's published review might well cause "wonder as to whether states co-operating under the Sheppard-Towner Act are being duped, or co-operating as a result of the activities of job-holders or potential job-holders. Based on the report of the United States Department of Labor Children's Bureau for the fiscal year ending June 30, 1927, startling figures are shown. It is noted that the states accepted \$4,697,234.86 of Federal funds, which means that the expenditure was in excess of nine millions of dollars as most of the Federal funds are matched dollar by dollar for the states."

Apparently this vast expenditure was no factor in lowering the death rate. Why? Because the Sheppard-Towner Act is not now, never was, nor ever could be a medium for palliating maternity mortality since the inherent nature of this legislation makes it impossible to effect such functioning.

Presenting the argument in figures,—saying it with numbers, as it were—in Illinois, though the improvement took place down state and not in Chicago, infant deaths per thousand live births declined from 64.4 to 64.2. Fatalities among babies less than twelve months of age were reduced from 8,606 as in 1927, to 8,321.

In Chicago there were 1,872 fewer births in 1927 than in 1928 so that the reduction in infant deaths per 1,000 births had an increased pro-rata of 63.9 in 1928, as against 62.7 in 1927. Downstate infant deaths in 1928 were 4,545 instead of 4,784 as in 1927, so because of this congratulatory difference of 239 the down state infant death rate fell from 65.7 to 64.3.

Illinois maintained its maternal mortality figures of 5.1 per thousand, the same as in 1927. While fewer deaths were registered from childbirth,—694 in all,—yet the unusually low birth rate recorded put these figures at a disadvantage in the computation of statistical tables. Of these 694 deaths in childbirth 322 were out of a total 61,216 births and stillbirths in Chicago, or a rate of 5.1 per 1,000. As there were 73,130 births and stillbirths down state, the 372 maternal deaths lowered the down state rate to slightly more than five per thousand. Further classification of these figures shows that even 66 per cent. of these deaths were preventable, as in 237 or 34 per cent. of all the deaths the cause



is laid to puerperal septicemia, while in 181 other cases, or 26 per cent. acute nephritis was held to be the mortality cause.

Lowered birth rates and increased infant mortality rates came principally from urban districts. Especially is this true of 19 out of 44 cities of more than 10,000 population such as Chicago, Peoria, Cicero, Danville, and Decatur, each with a minimum population of 38,000. Urbana reported no change in rate and twenty-three cities reported declines.

Illinois, remember, has not the Sheppard-Towner Act on its shoulders. Of these twelve out of the forty-eight states experiencing an improvement in the infant mortality rate, were the five, that are not burdened with this invidious legislation,—Illinois, Kansas, Connecticut, Massachusetts and Maine. These lead. Of the other seven, California was the only other state with a large population and working under the Sheppard-Towner act that reported a decrease. Native sons should hold this another guerdon for California sunshine.

Illinois as a state is to be congratulated on its wisdom, rooted in the activities of ethical organized medicine, in keeping invidious medical legislation off the statute books. To this foresight and to that eternal vigilance by which the medical liberty of commissions of health and sanitation has been left to a large degree in the hands of the doctors, lies a large part of the credit for the high rank of Illinois in vital statistical tables.

Along with this fine record on infant mortality and in spite of the fact that birth rates decreased in 34 states and death rates increased in 1928 over 1927, Illinois is on the right side of the fence. Thirty-eight states were included in these figures. When the federal census bureau compiled its basic tables Massachusetts had not yet completed its vital statistics for 1928. Colorado, Georgia, Oklahoma, and South Carolina were not in the registration area in 1927. Utah is also omitted.

Still, including these states, *not a single state in the Union showed a decreased death rate in 1928 and only Maine and Vermont held to the level of 13.9 for both years.* Maine held to its birth rate. There was an increased birth rate in Arizona, Delaware and Montana, and the national death rate that had been 11.4 in 1927 in-

creased in 1928 to 12.1 per 1,000 population. Birth rates that had been 20.7 per 1,000 of population in 1927 fell in 1928 to 19.7.

Oddly enough the Illinois death rate increase of from 11.4 in 1927 to 12.2 in 1928 is practically coincident with that of the national death rate increase.

Commenting further on these statistics is an interesting excerpt from the *Chicago Daily Journal*, of July 22, 1929. This reads:

"The birth rate for Illinois is below the national figure. It fell from 18.3 in 1927 to 17.5 per 1,000 for 1928. Only three states in the registration area had a lower birth rate than Illinois. These were Idaho, 16.6; Oregon, 15.6; Washington, 14.4; with Colorado the same as Illinois or 17.5 per 1,000. Illinois lost standing in relative death rates. In 1927 there were eighteen states which had a lower death rate, while in 1928 there were twenty-two lower than Illinois.

#### DROP IN INFANT MORTALITY

"Illinois was one of the eleven states which showed a decrease in infant mortality in 1928 for the year. This is an outstanding distinction because the national mortality rate for infants under 1-year of age jumped from 64.6 per 1,000 to 67.9 in 1928, or an increase of 5.1 per cent in a single year. In exact numbers this means that 6,489 infants under 1-year of age died in the registration area in 1928 over and above the number that would have died with the 1927 death rate prevailing.

"The state that reduced infant mortality were:

Name.	1927 rate.	1928 rate.	Decrease per 1,000
Maine .....	80.0	72.8	7.2
Vermont .....	69.8	64.9	4.9
North Dakota .....	63.4	59.2	4.2
Florida .....	67.4	67.1	0.3
California .....	62.3	62.1	0.2
Illinois .....	64.4	64.2	0.2

#### NO CUT IN CHICAGO RATE

"Illinois is the only state in the registration area with one of the first nine metropolitan cities in its borders which reduced its infant mortality rate in 1928. New York state increased its infant mortality rate 5.1 per 1,000, almost 10 per cent in a single year. Pennsylvania, the next in size, advanced its rate 3.3 per 1,000, an increase of 4.7 per cent. Ohio, next in size to Illinois, increased its rate 5.6 per 1,000, or 9.1 per cent.

#### SURPASSED BY ONLY THREE CITIES

"Compared to the twelve largest cities in the United States Chicago holds an outstanding position in controlling infant mortality because only Baltimore, Los Angeles and San Francisco have surpassed it. Tabulation shows the relative rank of these cities in infant mortality rates:

City.	1927 rate.	1928 rate.	Increase per 1,000
San Francisco .....	49.7	45.5	4.2*
Los Angeles .....	66.3	65.7	0.6*
Baltimore .....	81.4	81.6	0.2
CHICAGO .....	62.7	64.0	1.3

Buffalo .....	72.0	74.1	2.1
Milwaukee .....	68.0	71.0	3.0
Pittsburgh .....	72.1	75.2	3.1
New York .....	56.0	59.3	3.3
Cleveland .....	56.0	60.1	4.1
St. Louis .....	57.4	63.8	6.4
Philadelphia .....	63.9	70.8	6.9
Detroit .....	70.0	77.4	7.4

\*Decrease.

"Not a single one of the eleven largest cities in the United States increased its birth rate or lowered its death rate during 1928. Chicago decreased its birth rate from 19.6 per 1,000 in 1927 to 18.7 in 1928; and increased its death rate from 11.5 per 1,000 in 1927, to 12.5 in 1928.

Vital statistics on infant and maternal mortality during 1925, 1926, 1927, in the five states working without the Sheppard-Towner Act were:

#### INFANT MORTALITY RATES

	1925	1926	1927	1928
U. S. Registration Area for Birth .....	71.7	73.3	64.6	67.9
Connecticut .....	73.3	72.1	58.8	59.0
Illinois .....	72.5	69.4	64.4	64.2
Kansas .....	61.7	65.3	55.3	59.2
Maine .....	76.3	80.0	80.0	72.8
Massachusetts .....	73.0	73.1	*	*
	71.36	71.98	64.4	63.8

Average 4 to 5 States... 7

\*No Data returned to U. S. Bureau.

#### MATERNAL MORTALITY PER 1,000 LIVE BIRTHS

	1920	1924	1925	1926
Registration Area .....	8.0	6.6	6.5	8.1
*Connecticut .....	6.8	5.7	4.9	5.76
†Illinois .....	*	6.2	5.8	6.50
Kansas .....	8.4	6.3	6.5	6.97
Maine .....	8.5	8.2	7.2	6.69
*Massachusetts .....	9.3	6.5	6.3	6.42

Average States..... 8.25 6.58 6.14 6.47"

\*Not in Registration Area for Births.

†Latest Available Figures.

As the *Quarterly Review of Biology* so aptly says:

"That eight millions of dollars spent for the Sheppard-Towner Act seems to us like a lot of money. What have we got for it, outside of creating some pleasant places for jobholders?

"Examining tables it is found that during the year ended June 3, 1927, there were held a total of 33,783 conferences at which 29,041 mothers and expectant mothers and 227,733 children were registered, inspected, advised and instructed. In the same period there were also conducted 1,196 classes in which 26,356 mothers were enrolled, etc.; a total of 18,207 talks and lectures, including 110 radio broadcasts, were given to 408 physicians, 794 nurses, 13,442 laymen, and the uncounted millions of the radio audience; 46,217 sets of prenatal letters were sent out; and that the total of 'pieces of literature distributed' was 4,403,218."

"The jobholders have not been idle. In the section, "Some Results of Five Years of Work," under the heading "Reduction in Infant Mortality," a table gives the average infant mortality rates by states for the years 1917-1921 (exclusive of 1918) and 1922-1926—before and after the act took effect. By this we are able

to compare the course of affairs in the co-operating states with those not co-operating. No averages are given in the table, but it is easy to compute them; which was done by Dr. G. Henry Mundt with the result here given:

	1917-21 (1918 omitted)	Infant mortality 1922-26	Per cent. decrease
16 co-operating states .....	80.07	71.56	10.6
5 non-co-operating states .....	84.96	73.18	13.9

These figures are simply flat averages of the rates given in the table. Weighing them by the population of the states, and omitting certain states which either did not come into the Birth Registration Area until 1919 or which did not begin co-operating until 1923, neither this nor any other treatment of the figures has altered the conclusion that eight million dollars of the taxpayers' money has been spent with precisely no effect at all on the course of infant mortality.

"People all over the country are commencing to question more and more the feasibility of bureaucratic government which is becoming all too prevalent. This analysis of the operation of the Sheppard-Towner Act is just one more link demonstrating the impracticability of Federal Bureaucracy," says Dr. Mundt.

All the figures cited in this article go to prove that the Sheppard-Towner Act lives up to the Editor's contention from the outset in 1921 of this proposed legislation that as a medical aide-de-camp, the Sheppard-Towner Act is most efficacious when it is non-existent.

#### HOW TO KILL YOUR MEDICAL SOCIETY

1. Don't come to the meetings.
2. But if you do come, come late.
3. If you do attend a meeting, find fault with the work of the officers and other members.
4. Never accept an office, as it is easier to criticize than to do things.
5. Nevertheless, get sore if you are not appointed on a committee; but if you are, do not attend committee meetings.
6. If asked by the chairman to give your opinion regarding some important matter, tell him you have nothing to say. After the meeting tell everyone how things ought to be done.
7. Do nothing more than is absolutely necessary, but when other members roll up their sleeves and willingly and unselfishly use their ability to help matters along, howl that the organization is run by a clique.
8. Hold back your dues as long as possible; or don't pay at all.
9. Don't bother about getting new members. Let George do it.—ILLINOIS MEDICAL JOURNAL, February, 1922.

#### SAVING FOR A KIDDIE KAR

The real optimist, tho, is the Kansan who went to New York for a monkey-gland operation to restore his youth, and bought only a one-way ticket so he could get the benefit of a child's fare ticket on the return trip.



## Original Articles

### THE DIAGNOSTIC RELATIONS BETWEEN THE GALL BLADDER AND THE HEART\*

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There seems to be conclusive evidence that a definite relation exists between certain cases of gall bladder disease and heart disease. Surgeons occasionally use the phrase "cholecystic heart" with the idea that the gall bladder pathology bears a casual relation to the heart condition and symptoms. Graham recently accented this relation when he wrote, "We have observed brilliant results in cases of heart disease following cholecystectomy after it had been determined that there was a pathological gall bladder. We know of suspected cases of angina pectoris receiving complete and permanent relief following cholecystectomy after it had been determined that there was a pathological gall bladder." Babcock, in 1909, reported thirteen cases as evidence that chronic cholecystitis is a cause of myocardial failure. Lichty wrote well on the same subject. This paper apparently made very little impression though Willius recently wrote, "We at the Mayo Clinic have seen the striking improvement that so frequently occurs in the cardio-vascular condition following operation."

Acute cholecystitis seems to have less disturbing influence as a rule on the cardio-vascular system. However, the great pain incident to a paroxysm of biliary colic seems more definitely to upset the circulation. Osler, Krehl, Sticker and Reisman have noted disturbances of the heart during such paroxysms of biliary colic and Allbutt recorded a case of an otherwise healthy young woman who died suddenly during an attack of colic. At necropsy a stone was found in the common duct but the heart and body otherwise were normal. Willius reports a series of sixty-one cases of chronic cholecystitis which were complicated by cardio-vascular disease. Of these, following operation, 54 per cent. showed definite improvement in their cardio-vascular condition, 16 per cent. were unchanged and 7 per cent. were worse. Abram and Weitzand have reported similar cases.

The presence of gall stones is probably to be regarded as a by-product and an end result of inflammation or disease of the gall bladder. Cholecystitis does not include cholelithiasis, but the latter usually intimates the former. Whether inflammation is the sole element or even the chief element in influencing the heart and just how much part stones may play, are factors difficult to separate and evaluate. The gall bladder is not an organ to be medically or surgically despised. While not much good may come of it, certainly much evil may proceed from it, though one author recently referred to it as "a relatively unimportant appendage." When diseased, it rarely lives unto itself alone. Sudler showed the intimate lymphatic connection between the gall bladder and the liver through the attachment of the gall bladder to its liver bed. Graham next confirmed Sudler's experiments and showed that in every case of cholecystitis a hepatitis was present in the interlobular sheaths as a cholangitis. When secondary to a cholecystitis, the right lobe was more involved than the left, and the right lobe near the gall bladder most of all. The hematogenous route may be the common one for infection of the gall bladder, but it may be of lymphatic origin secondary to a hepatitis.

Many problems arise here that center around a rather simple question: How does a diseased gall bladder affect the heart? Here is a hollow pouch, blind at one end, holding 30 c. c. of bile, having apparently the two functions of storing and of concentrating bile, usually full in the early morning, emptying by its own contraction, fed by a branch of the right hepatic artery, drained by the cystic vein which empties into the portal vein, innervated by sympathetic ganglia and fibers and apparently by medullated fibres from the left vagus, which if diseased and when removed in certain cases, relieves or improves a heart failure or perhaps dramatically cures angina pectoris. One abnormal gall bladder may be associated with signs of failure, another with angina, and another with no heart disturbance. Why do a few hearts seem drawn into the cardio-vascular picture and others not at all? A healthy heart may stand a severe infection or a reflex vagal inhibition easily or recover from such influences quickly, whereas a heart muscle may be seriously damaged to the

\*Oration on Medicine at 79th Annual Meeting of Illinois State Medical Society, Peoria, May 21-23, 1929.

point of actual failure of variable degree. Sufficient studies have not been made to determine whether the bile acids play any part or whether splanchnic disturbance either vascular or nervous, or both, has an influence.

Kahn and Barsky discuss the relation of gall bladder disease to angina pectoris and state that the relation "requires careful clinical consideration." The common link between gall bladder disease and angina pectoris is pain,—and pain from either may localize in the epigastric region, or higher up, substernally, precordially or down the left arm. Certainly, as these authorities state, the diagnosis of both diseases may be made when symptoms pointing to both conditions are present. But cases occur, as will be illustrated later in Cases No. 4 and No. 5, when the pain and the symptom alone point to angina pectoris but the subsequent developments showed what was thought to be angina pectoris and what probably was angina pectoris, to be a symptom of cholelithiasis and cholecystitis. The error, heretofore, in these cases, the chief point in this discussion, and the real reason for this paper, is that the diagnosis is made of angina pectoris and the patient considered to have only angina pectoris, whereas the angina pectoris is but a symptom related to and caused by a chronic cholecystitis.

Case No. 2 illustrates that one may have apparently an angina pectoris of effort and yet the disease was apparently caused by a cholecystitis and that without stones. Certainly what was called angina pectoris was cured by cholecystectomy. However, one must remember the point made by Kahn and Barsky—that cholecystitis and angina pectoris may be associated with definite symptoms of both. It is not here to be intimated that when such an association exists that a cholecystectomy will relieve every case of angina pectoris.

Surgeons are only indirectly interested in heart disease and the tables of symptoms of cholecystitis are usually constructed by them. It is natural that as a rule any study of the relations between the gall bladder and the heart should come from internists. We have been in the throes of the doctrine of focal infection, which however valuable, has its limitations but perhaps also has relations not thoroughly studied. One authority states that "the causal

relation of foci of chronic infection to heart disease is not proven." This is preceded by the statement that "any acute infection may aggravate the existing cardiac disease and at times may actually cause it." Willius sums the matter by saying: "A chronic focus of infection may not be the immediate cause of trouble elsewhere, yet it is shown repeatedly that the progress of a disease is enhanced by such a focus." One has only to think of a diphtheria or a typhus fever to realize the result of an acute infection on the heart. It is not difficult to realize that chronic infection in the gall bladder may damage the heart, particularly when cholecystitis is chiefly a disease of middle and old age at the period when hypertension, arteriosclerosis, valvular disease, hypertrophy and obesity are most frequent and the heart may already be impaired, or do too much work for the age.

Acute cholecystitis averaged only 7.6 per cent. out of 848 cases of disease of the gall bladder, whereas chronic cholecystitis is "one of the most frequent ailments of adult humanity." In one series of 1,650 patients gastric symptoms from chronic cholecystitis were three times more frequent than from appendicitis, twice as frequent as from duodenal ulcer, twelve times as frequent as from gastric ulcer and six times as frequent as from gastric carcinoma. Eusterman concludes "that 60 per cent. more cases with gastric symptoms are associated with a distended gall bladder than with a peptic ulcer." The abnormal gall bladder, which comes under the term "cholecystitis," is usually an inflammatory process. The strawberry gall bladder may be an exception to this. Approximately 55 per cent. of cases of chronic cholecystitis are associated with stones. The incidence in women is twice to three times as frequent as in men. Of the autopsies at the Mayo clinic more than 60 per cent. have shown gall bladder pathology. In suspected cholecystitis jaundice is of value and is usually associated with stones but the absence of jaundice is no evidence against a chronic cholecystitis.

In chronic cholestitis advanced heart failure is rare but a first degree heart failure is common. To delay operation on the gall bladder and yet keep the patient in bed is really treating the circulation and increasing the cardiac reserve. It is, however, in cases of cholestitis associated with angina pectoris that apparently greater



diagnostic surprises occur and clinical cures as well. It is probably wise for internal medicine to enlarge its conception of angina pectoris. We have tried to find *the one cause* of angina pectoris, but there is probably no more one cause of angina pectoris than there is one cause of meningitis. Levy has just accented the necessity for enlarging our conception of angina pectoris and speaks of it as the "symptomatic manifestations of many pathological states." We have thought of heart disease at different periods in such different terms and in such varying points of view. In the time of Senac, Corvisart and Burns we thought in terms of enlargement and dilatation and dropsy; in the time of Withering, in terms of dropsy and digitalis and just a little of heart strength; in the time of Laennec chiefly in terms of murmurs, and then not until in the time of MacKenzie did we apparently begin to accent heart disease in terms of muscle and muscle strength and muscle failure, as it deserves to be. Lewis and MacKenzie and Wenckebach explained the arrhythmias, but probably not even yet do we think of heart disease adequately in the larger accents of its etiological criteria.

For example, we know much more about angina clinically than we do etiologically. To enlarge our conception of angina is to consider it not only a pain but rather a painful manifestation of a greatly varied pathology. In certain cases it seems to be a symptomatic manifestation of an abnormal gall bladder. Into this pathology, as a cause, the gall bladder should be considered and with the addition of cholecystography we have a method of investigation. In an adult repeated angina pectoris in the absence of certain etiology should suggest the consideration and investigation of the gall bladder with cholecystography unless, of course, the gall bladder symptoms are so pronounced that more careful investigation is unnecessary. We are not sure at any rate of the difference between cardiac pain of varying degree and this pain that we call angina pectoris. Levy includes, under clinical condition with which cardiac pain may be associated, such a variety of pathological states as affections of the coronary arteries, affections of the aorta, cardiac valvular disease, pericarditis, disorders of the hematopoietic system, endocrine

disorders, cardiac neuroses, and pathogenesis undetermined.

The intimation that the abnormal gall bladder may cause heart failure or may be the cause of a suspected angina pectoris without apparent cause, may persuade one not only to investigate the gall bladder but to prepare the patient carefully for operation with the idea that a cholecystitis may be a two-edged sword which constitutes the pathology and causes the heart symptoms. Occasionally deep palpation of an abnormal gall bladder will cause a reflected pain to rise obliquely to the precordium with or without reflection to the shoulder, and down the left arm. In a woman of 45 with general complaints of nervousness, weakness and abdominal discomfort, particularly gas after meals, deep thumb palpation of the gall bladder immediately caused a pain to appear under the lower third of the sternum, over the precordium and in the left shoulder. It was reflected in almost a straight line to these three points. Cholecystography confirmed a suspected abnormal gall bladder. Operation revealed a chronic cholecystitis with two large stones. Occasionally there is substernal radiation. A diagnostic relation between the diseased gall bladder and certain cases of angina pectoris that justifies the name "gall bladder angina" is illustrated by the following cases:

1. W. A. B., a man, aged 69, was admitted to the hospital May 16, 1927. He had complained for two years of attacks of substernal pains extending across the chest at the nipple level and involving the upper epigastrium. The attacks came when he was worried and tired. There was no radiation of pain to the arms or shoulders. The pain at times was tight to grinding, vomiting occurred and a hypodermic was required. Past history was negative except for typhoid at twelve and an attack of acute, painless jaundice at 30. There was a one plus dilatation of the aorta, heart sounds clear and blood pressure normal. A diagnosis of angina pectoris had been made for the past two years. A week before coming to the hospital he had become jaundiced, but the day after entering the hospital he had a severe vice-like attack of substernal pain requiring a grain of morphia for relief. Temperature rose to 100.4 degrees and pulse to 100. Apparently this was an attack of gall bladder colic with pain in the chest under the mid sternum. Operation was done four days later and a small, fibrous gall bladder was found which contained a stone. A cholecystectomy was done. There has been an excellent recovery and no further pain in the chest. Operation was done by Doctor Dan C.

Elkins, who states in his notes: "This is the first case of gall stone colic I have ever seen so closely simulating angina. I do not believe the diagnosis would have been correct unless this patient had become jaundiced."

2. W. H. C., a physician, aged 57. This patient underwent a cholecystostomy in 1916 previous to which time he had been suffering with jaundice. In November, 1928, after hunting, he ate a large dinner and then drove two hundred miles. The next day there was an attack of severe pain which began in the epigastrium, proceeded substernally to the precordium, down the left shoulder and left arm. Pain lasted seventeen hours and morphia did not relieve. Since that time he has had variable attacks—one in the right upper quadrant, another substernal and precordial and down the left arm. In January he had a severe attack, which he considered to be angina pectoris, substernal, precordial and to left arm, and thirty minutes later an attack of severe pain in the right upper quadrant. A cholecystectomy was done March 29, 1929. There were no marked adhesions and the rather small gall bladder showed a mild cholecystitis. There were no stones. Blood pressure has been normal throughout. There was no shortness of breath and all pains have disappeared. The patient considered himself well. There have been no more attacks.

3. J. M. F., aged 55, had been complaining of angina pectoris for a year. His condition had gradually grown worse. Past history negative. Angina pectoris was substernal, precordial to the left shoulder and down to the tips of the fingers. It appeared with worry, excitement, strain, over-eating, and particularly with exercise. The attacks were so easily produced that one would develop if he walked a block from his residence to the office and the substernal pain would appear after rising from his chair and sweeping the hearth with a small broom. A diagnosis was made of angina pectoris probably dependent upon coronary sclerosis. He entered the hospital on January 12 and that night had a most severe attack in the right upper quadrant which was not relieved by morphia. He slept all day the thirteenth and the fourteenth had a second similar attack in the right upper quadrant. He requested operation and cholecystectomy revealed a strawberry gall bladder. There were no stones. The pain has disappeared, though uphill or upstairs gives slight shortness of breath.

4. L. L. B., aged 59, a civil engineer. Past history negative. He complained of shortness of breath for six months and precordial pain for four years. There have been several very severe attacks which radiated to the left shoulder and down the left arm with pallor, shortness of breath and fear of death. He had complained previously of numbness in the ring and little fingers of the left hand. A diagnosis had been made of aortitis with dilatation of the aorta. Hypodermics were necessary for relief of the pain. Blood pressure and heart sounds were normal. Peripheral vessels were

one plus thickened. There was very slight tenderness on deep pressure over the gall bladder. Impression was of angina pectoris third degree, heart failure first degree, and arterio-sclerosis. While under observation he suffered an attack of indigestion which he attributed to food, then became jaundiced and a diagnosis of cholecystitis was made. Operation revealed a chronic cholecystitis with a large number of stones. Recovery was uneventful, shortness of breath and thoracic pain disappeared and he feels well. He can hunt all day.

5. L. F., aged 48, had suffered for two years with several attacks of mild precordial pain, reflected to left shoulder, down the left arm and always relieved by nitroglycerin. She was nauseated and nervous at times. Always there was an uneasy feeling about her heart during attacks, though no pallor. She was admitted to the hospital in July, 1928, and remained for three weeks under a diagnosis of angina pectoris and obesity. In January, 1929, she had an acute attack, like gall stone colic under the right costal margin; jaundice quickly followed and a marked tenderness over the gall bladder developed. There were twelve attacks in one month. Cholecystectomy was done, pericystic adhesions were present and the gall bladder thickened—a typical chronic cholecystitis with two stones.

#### CONCLUSIONS

1. The patient with a diseased gall bladder previous to any symptoms characteristic of cholecystitis, with or without a cholelithiasis, may present symptoms of early heart failure or angina pectoris, or both.

2. In middle and old age heart failure or angina pectoris may be produced or accented by a diseased gall bladder.

3. In both conditions the gall bladder may be the cause, but all the signs and symptoms may appear cardiovascular in nature.

4. It is suggested that cholecystography may be of great aid in distinguishing between an angina pectoris dependent upon a gall bladder pathology and an angina pectoris dependent upon other pathology.

5. Such patients, provided they be in fair condition and *well prepared* for operation, should not be deprived of the benefits of surgery. They apparently stand operation better than their clinical condition might indicate.

NOTE: I am indebted to my colleagues at the Emory University Hospital, Dr. C. W. Strickler and Dr. Dan C. Elkin, for opportunity to study some of their cases. Their assistance has been invaluable in the preparation of this paper. I am also indebted to my asso-



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### PERIODIC HEALTH EXAMINATIONS\*

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The subject of periodic health examinations or health audits is one which has given rise to much discussion during the past few years, and many articles have appeared in current literature dealing with its various phases. It is quite remarkable the great similarity that is to be found in these articles. Nearly all of them discuss the great advantages that the authors believe will accrue to those examined, and then follows usually a treatise on how such examinations should be conducted. As is quite common in similar cases, much of the matter consists of quotations from previous articles, or of opinions passed on from one to another, with very few new facts presented on which the opinions are based. The opinion that increased

longevity has resulted from these periodic examinations is not based on evidence that has been analyzed in a manner to satisfy scientific criteria. One or two insurance companies claim that the mortality rate in a small number of their policyholders, who have had health examinations made, was less during a comparatively short period than was to be expected from their mortality tables. There was no evidence presented, however, indicating what, if any, pathologic conditions were found at these examinations, nor if such conditions were found, whether or not anything was done to relieve or remedy them. The mere fact that a health examination had been made is no proof that the slightly lower mortality rate bore any relation to the examination. There is scientific evidence of a definite downward trend in the mortality rates during the past few years which must be taken into account in the evaluation of any health measure at this time. Even though it could be clearly shown that periodic health examinations would result in a lowering of the mortality rate, or that it would promote longevity, it would still remain to be shown that such diminished mortality rate, or such increased longevity was of material advantage save to life insurance companies that are interested primarily in the number of premiums paid by its policyholders. The number of such premiums is increased naturally by anything that will prolong life. The value of periodic health examinations cannot be based, therefore, on the mere fact that longevity may be increased as shown by life insurance mortality rates. To justify the medical profession in urging periodic health audits on the people, it must be clearly demonstrated that such examinations not alone tend to prolong the life of the individual, but that they also add to his health and happiness and usefulness to others. These latter benefits must greatly outweigh the former, since a life prolonged in ill health and suffering and but a care to others, is of very doubtful benefit.

The most important phase of the subject then is, the value of a health examination, or health audit to the patient. The term "patient" is used to include those presumably in good health, as well as those having some definite ailment. We may eliminate from our discussion at this time any value which these examinations may

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have to life insurance companies in the prolongation of the life of their policyholders. If these examinations do not lead to better health, happiness, and usefulness to the patient, then it were better that they be discontinued. We shall try to analyze the subject with this point in view. It is claimed by the proponents of the practice, and I may say that practically all who have written on this subject are in this class, that the human machine, like any mechanical device that generates or transforms energy, must be kept in good repair if it is to operate at its maximum efficiency. A very fascinating analogy is drawn between a locomotive, an automobile, a fine watch, etc., and the human machine. It is pointed out how essential it is to keep a machine in good repair, to keep it well oiled and free from dust and dirt, to prevent too much wear and tear in order that its life may be prolonged, and its efficiency maintained. This analogy so beautifully drawn is not well chosen, since there is a vast difference between a mechanical device and a living organism which seems to have been overlooked, and that is, that the latter or the living organism possesses the power of self adjustment, or the ability to make its own repairs. This power to adjust internal to external relations resides in the living organism itself, and is not comparable to the repairing of a machine by man, hence, much of the glamour of the analogy is lost—it is a fictitious or deceptive beauty. This power of making its own repairs while self contained is also limited—limited in degree as well as time.

It is these facts that have led so many physicians to urge strongly the need of a periodic examination in the hope that any deviation from the normal may be detected before it has reached a stage that is beyond repair. It is evident, therefore, that the claim that a physical examination of an apparently healthy individual is beneficial must rest on two assumptions: first, that it is possible to recognize the incipient stages or deviations from the normal at a time when repair or a return to normal is still possible, and second, that it is possible by proper treatment or by regulation of one's habits to bring about the result desired. It requires a much more thorough physical examination and a more careful and intimate study of one's personal habits, his mode of living, his hereditary

tendencies, etc., if one would attempt to advise an apparently well person, than is often necessary in the presence of a definite and well-defined pathologic condition. It is not alone sufficient to detect gross pathologic lesions. The purpose of these examinations is to recognize pre-pathologic conditions, if I may be permitted to use such an expression, and the only index of such conditions is function. Every organ is capable of performing more work than is required under ordinary circumstances and often long before physical changes are recognizable as such, deviations from the normal are to be detected only by diminution in the amount, or an alteration in the quality, of the work done. This involves the determination of the degree or quality of function present, and since that is often not practicable or even possible we are frequently compelled to fall back on the patient's sensations as a guide to early pathologic conditions.

Here are three facts that present themselves for consideration: one, physical changes may occur without giving rise to abnormal sensations under ordinary conditions; two, highly sensitive or nervous persons may mislead by greatly exaggerating or even imagining sensations; three, sluggish or stoic persons, wishing to deceive themselves, may overlook or deny the presence of sensations which actually exist. In order to recognize and correctly interpret these various states often requires an intimate knowledge of the person's temperament, of his disposition, of his tendencies, of his business and social relations in life. To be able to do this, one should have a good knowledge of psychology at least to the extent of being able to recognize his patient's mental attitude, his susceptibility to suggestion, the effect that worry over his physical condition may have on his general health and happiness. These things are often of the greatest importance to the welfare of the person who comes for a health audit. These facts also emphasize the importance, if not the necessity, of having health audits made by the person's family physician, by one who is intimately acquainted with the individual. They also show the absurdity of having such an examination made by a representative of some lay corporation organized for profit with a home office located often a thousand miles away. When insurance companies began recommending to their policyholders to have a periodic



examination, with the idea of increasing longevity, certain commercial organizations sprang up for the purpose of making these examinations and thus securing some of the financial gain which might accrue to the insurance companies by reason of the increased number of premiums paid, provided it could be shown that life might be prolonged somewhat as the result of these examinations. Since the physician is the only person competent to make these examinations these commercial institutions can prosper only by securing a large number of physicians throughout the country to whom policyholders and others may be sent to have an examination made. The person examined in such cases is usually a stranger to the physician who makes it. The latter fills out a blank form and sends the report to the home office of the institution. For this examination and report the physician is paid by the institution \$3.50 or \$5.00. The physician making the examination is not supposed to give the examined any advice, nor even to tell him anything about the conditions found. The home office, after reading over the examiner's report, writes to the examined, telling him of the conditions found and advising him what to do for them, for which advice a charge of from \$20.00 to \$25.00 is made. In plain words, the physician who makes the examination sells his knowledge and brains to an institution for \$3.50 or \$5.00, and the institution re-sells the same to the person examined at a profit of from 300 to 400 per cent. What great clairvoyant or second-sight powers these advisers at the home office must have! What manner of amplifiers have these jobbers in medicine by which the value of an examination and report made by a physician is amplified from \$3.50 or \$5.00 to \$15.00 or \$25.00! Is a person at a distance better able to advise one as to his physical condition than is the physician who has talked with him, who has made a careful physical examination of him, and who is familiar with his characteristics, his tendencies, his family traits, and his economic situation? The proposition is so absurd that it would seem that the ordinary layman would fail to be impressed by it. We may excuse the layman on account of his thoughtlessness in matters of this kind, but how can we excuse the doctor who permits the products of his brain

to be sold to a jobber who resells it to the consumer at a profit of from 400 to 500 per cent? Should not common business acumen restrain him from falling a victim to the sophistry of these institutions? Periodic health examinations are not a matter of altruism, nor are they an act of charity, but they are purely a business proposition; however, on this basis it is the duty of the physician to see that the patient gets value received for the consultation fee paid. Many persons apply for an examination with an earnest desire to know what their physical condition is. It will not do to put them off with an evasive answer, or with a simple remark that they are all right, or with a haphazard examination. One must listen attentively to what the person has to say, he must bring out all the symptoms and sensations which he may have and analyze them carefully in order to properly evaluate them, and after this has been done a complete physical examination should be made with the usual laboratory tests. In other words, if a health audit is to be made, let it be a complete one. For some years the medical profession has been urging people to have these health audits made. The advice has been given earnestly and seriously and entirely with the idea of benefiting the individual. The reasons why this advice should be followed have been clearly set forth repeatedly. People are proverbially procrastinators, and even when symptoms or other evidence of an existing pathologic condition are present they are prone to delay consulting a physician. There is nothing more disheartening to a physician than to be consulted by a patient who by carelessness and neglect has permitted a curable condition to become incurable. It is this perhaps more than anything else that has led the profession to continually urge people to be examined. It may seem at times that it may have been too insistent on apparently well people submitting themselves to periodic examinations, but if so, it is due simply to the earnest desire to stimulate in everyone a greater appreciation of good health, which so easily lost is often difficult to regain. Perhaps too much enthusiasm may have been displayed in this connection, and too much stress laid on the importance of well persons being examined. Of course no one will attempt to deny the necessity of everyone who experiences

any evidence of a disorder consulting a physician at once, but there are those who believe that the matter may be overdone in regard to the well person, and that harm even may result to some individuals by an injudicious examination, particularly if the report of the findings is given to the examined. Logan Glendenning in his work on "The Human Body" says, "There are all over this country now institutions whose sole business it is to make routine physical examinations on supposedly healthy persons once or twice a year. There is growing up a strong wave of opinion in favor of this plan, and among the most enthusiastic adherents of it are the members of my own profession. From that opinion I most strongly dissent. If I am asked: 'What, don't you believe that a person should be examined once a year?' My reply is quite simple—'No, I do not.' I have seen the plan in operation and I have seen practically nothing result but grief and unhappiness. The number of people who supposed themselves well and who were symptomless, and who found on examination a condition of disease which could be materially remedied—the number of people whose lives were lengthened—was so small as entirely to be minimized in the face of the dead load of meaningless sorrow entailed. What usually happens is this: most of the patrons of such a system are men; most of them have considerable financial responsibility, and most people who have considerable financial responsibility are no longer young. Therefore a middle-aged man is the usual victim. In the great majority of cases if such men have anything to be found wrong with them, it is a slight defect of the heart, some kidney change, and a beginning of hardening of the arteries, or hypertension. There is 'a splintering of the Q R S wave in the electrocardiogram, an accentuated aortic, a pressure of 170 over 95, a faint trace of albumin, and an increase in the blood uric acid.' This report is handed to a man who believes he is in good health. He looks up things in an encyclopedia or medical book and decides he has received his death-sentence. He goes on a diet to reduce his uric acid, is denied whiskey, gin, tobacco, and venery, in fact everything which might lighten the gloom. Not one of his abstentions changes the tissues of his body. If he had not had the examination, he might have lived twen-

ty-five years without a symptom. He has been turned from a happy, self-contented member of society into a morose, apprehensive hypochondriac. This scene has become so frequent a drama that in my own circles there is a phrase for it—'one of those damnfool health extension cases.'"

There is much truth in this statement. However, the fault lies not in the mere fact that the person has had a physical examination, but in the lack of good judgment on the part of the physician making it. How often do we have patients come into the office bearing a report from some institution that makes periodic urinalyses, or periodic health examinations, calling the patient's attention to some apparent abnormality in the urine, or in the blood pressure, or in the pulse rate, etc., which may be of no significance in itself, but which has unnecessarily greatly frightened the patient and caused him needless apprehensions about his health. Much harm may be done in this way to those who are of a nervous disposition or easily affected by suggestion, by permitting them to read reports which they are unable to interpret, or by thoughtless statements made by the examining physician, which only excite their fears and make them unhappy. Whenever such a person gets it into his mind either by what has been unintentionally said, or written, that he has something the matter with him it is often almost impossible by any amount of arguments to convince him that what was trivial and of no importance was not really of serious import. Great judgment and care are required, therefore, in making disclosures to such patients in order not to cause needless mental distress. For this reason these examinations should be made by the family physician, or by one who is thoroughly familiar with the individual's temperament, and not by an impersonal institution at a distance.

I have had recently two cases illustrating the harm that may result from a report from an institution at a distance on the condition of the persons examined. One was a case of a young man who was engaged and about to be married. He came to me in great perturbation of mind and showed me the report which he had received.

In the report it was stated among other things



that his heart was affected and that he was syphilitic. You may imagine the state of mind of a young man about to get married after reading that report. Neither in his history nor in the physical examination was there the slightest suspicion of his having had syphilis, and repeated Wassermanns were negative. Careful examinations and tests of his heart functions failed to show anything abnormal.

The second case was that of a middle aged man of great business responsibilities, who was informed in his report that he had Bright's Disease. Naturally he was greatly disturbed in his mind, since if it were true it necessitated material changes in his affairs.

He was examined, therefore, by two or three very competent physicians, who observed him for some time, making repeated tests and who failed to find any evidence whatsoever of disease of the kidney.

These cases demonstrate how important it is that these examinations should be made by one's family physician who can observe the patient when necessary, and how inadvisable it is to make injudicious statements. This does not mean in any sense that an individual should be kept in ignorance of the presence of a definite pathologic lesion which may be benefited or relieved by proper advice or treatment. There are instances however, when it is inadvisable to make known to the patient the presence of an abnormal condition which is giving rise to no disturbance whatsoever and for which nothing can, or should be, done to correct. For instance, if one discovers that a person has a simple endocardial murmur which is unknown to him, and which is causing no symptoms whatsoever, and for which nothing can be done, it is very doubtful if the patient should be acquainted with the fact as it will but unnecessarily add to his worry and distress of mind. Likewise the discovery of a movable kidney, so common in women, which is causing no trouble or distress, should not be told to the patient since many women when told that they have a movable kidney almost immediately develop imaginary symptoms which are very difficult to overcome. In the presence of a definite condition which cannot be remedied, in a man of middle age, who is in active business, it is a great mistake to make him give up his business and everything else that has contributed to his pleasure in life

and thus make him miserable and unhappy with the idea perhaps of prolonging his existence for a short time.

During the last quarter of a century from ten to twelve years have been added to the average expectancy of life. This statement which is often made is usually misunderstood. It does not mean that ten years have been added to the expectancy of life at all ages, but simply that ten years have been added to the average expectancy which is very different indeed. This increase in the average expectancy of life is due almost entirely to a greatly diminished mortality rate during the first few years of life so that a much larger proportion of individuals live to adult age. In fact there has been practically no increase in life expectancy of those fifty years of age or over.

The significance of this is that if we hope to accomplish anything by our health examinations in the increase of life's expectancy it must be by the examination and care of the young.

Some most astonishing facts have been brought to light by Dr. Kegel, Health Commissioner of Chicago, in the examination of school children. Under Dr. Kegel's supervision 156,000 Chicago school children between 6 and 14 years of age were carefully examined by a number of selected physicians. Of this number 134,000 or 85% were found to have a total of 412,453 defects, classified as follows:

Malnutrition and Anemia.....	25,137
Enlarged Lymph glands.....	71,549
Enlarged thyroid .....	13,260
Nervous diseases .....	2,157
Cardiac disease .....	3,314
Defect of speech.....	3,014
Suspect tuberculosis .....	2,404
Other pulmonary diseases.....	5,927
Skin disease .....	8,337
Rickets .....	13,827
Other orthopedic defects.....	4,477
Defect of vision.....	29,902
Other diseases of the eye.....	8,150
Defect of hearing.....	3,087
Discharging ear .....	2,076
Defect of Nasal breathing.....	15,315
Defect of teeth and palate.....	105,722
Hypertrophied tonsils .....	61,763
Adenoids .....	32,205
Mentality .....	830

Grand Total .....412,453

This is found to be an average of 3+ defects to every child. In 111,000 children or 71% of those examined the defects were of such a degree as to require correction. If they are permitted to go uncorrected they are certain to be the cause of much morbidity and a greatly increased

mortality over those who are free from such defects.

From these facts it is very evident that if periodic health examinations are to accomplish great good they must be begun early in life when the defects that are discovered are still remedial and the regenerative and recuperative powers of the body are at their highest state of efficiency.

It is the duty of all family doctors to bring these facts to the attention of parents and to impress on them not only the importance of having their children examined at intervals but also the necessity of having the correctable defects that are discovered promptly remedied.

#### CONCLUSIONS

1. Periodic health examinations in order to accomplish the greatest good must be begun early in life.

2. The family physician who is familiar with the collateral facts relating to the patient is the one who should make the examination.

3. The one who makes the examination is the one most competent to give advice to the patient.

4. In examining adults the physician should be most judicious in what he communicates to the patient regarding his findings lest he do more harm than good.

5. The chief purpose of these examinations is to add to the health and happiness of the examined.

6. The principal advantage of these examinations is the opportunity which they afford the physician to educate the people in correct methods of living.

7. It has not yet been definitely established that periodic health examinations promote longevity.

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#### CORONARY DISEASE\*

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It is with some timidity that I approach the discussion of my subject this afternoon before your Association, because I am aware that a member of your Society has probably contributed more to our knowledge of coronary disease

than any other one man in this country. I refer to Dr. J. B. Herrick of Chicago.

We are hearing more and more at the present time concerning the increasing incidence of heart disease as a cause of death, and when one examines the statistics for the past twenty-five years covering the registration area of America, one is impressed by the fact that the mounting incidence of heart deaths affects individuals beyond forty years of age. We point with pride to the improvement that has been made in living conditions and to the longer span of years that people enjoy at the present time, but a critical examination of the data shows that we have done little toward increasing the life expectancy of individuals who attain the age of forty. Children born today have an expectancy of 55 to 57 years, but the present day adult of forty can look forward to living little longer than his progenitors of two hundred years ago.

Standing on the threshold as a barrier to longevity we have the group of so-called degenerative diseases of which arteriosclerosis, coronary disease, apoplexy and hypertension are examples. Our knowledge of the cause of human arteriosclerosis is, as you know, very deficient. In spite of a large amount of work on the subject we know little more fundamentally than did Lobstein nearly one hundred years ago, who first introduced the term arteriosclerosis to designate a thickening and hardening of the arteries. Therefore, with our knowledge so meager it behooves us to be cautious in drawing conclusions as to the factors underlying the vascular deterioration that we call arteriosclerosis.

Statistics show that at present the most common cause of heart death in individuals beyond forty is hypertensive heart failure. This was found in a series of more than one thousand autopsied cases of heart disease seen at the Cleveland City Hospital during the past ten years. A second important cause of heart death in adult life is coronary disease. The coronary arteries like other arteries in the body are frequently the seat of arteriosclerotic changes. The vessel wall is thickened and hardened and the lumen is more or less narrowed. The delicate intima normally in contact with the blood becomes roughened, with more or less calcification and fibrosis. This scarring of the intima

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is probably an important factor in spontaneous thrombosis since fresh coronary thrombi are most frequently found, at autopsy, in that part of the vessel showing the most extensive intimal disease.

When one observes a large number of cases of coronary disease at post mortem, one is struck by the fact that there is no parallelism between the extent of the coronary arteriosclerosis and the clinical signs of heart failure. There are more patients with advanced coronary changes that were clinically silent than there are those whose coronary disease was apprehended clinically and so diagnosed. At one extreme we see sudden death from coronary thrombosis in a man who regards himself in his customary health, and at the other advanced coronary disease that caused no symptoms. Between these two extremes we have a number of very difficult clinical problems so far as accurate diagnosis is concerned, namely, those individuals who develop more or less insidiously symptoms of breathlessness on exertion. Examined at this stage, one may be at a loss to explain the respiratory distress on the basis of heart disease. There may be no demonstrable cardiac enlargement, no evidence of valve disease, and no hypertension. Following such patients, however, over a period of months, one observes clear signs of myocardial insufficiency, i. e., edema, pulsus alternans, gallop rhythm, cardiac dilatation, etc. The clinical picture is that of progressive myocardial failure, but in the absence of the better known factors leading to heart failure the diagnosis is often an inferential one. At autopsy in such instances one may find extensive coronary arteriosclerosis with diffuse fibrosis of the ventricular muscle.

In order to explain the variety of clinical pictures that one sees in patients with coronary disease, it is necessary to mention a few points pertaining to the anatomy and physiology of the coronary circulation. The two coronary arteries spring from the very root of the aorta, in the Sinuses of Valsalva, and are distributed directly to the heart muscle. The left coronary artery supplies primarily the left ventricle and also part of the anterior wall of the right ventricle, while the right coronary supplies primarily the right ventricle, but also part of the posterior wall of the left ventricle. For many years physi-

ologists and anatomists debated as to whether the coronaries were end-arteries, but we now know that there may be an elaborate anastomotic communication between the branches of the two vessels. Observations on a large series of injected human hearts show that there is a certain relationship between age and coronary anastomosis; with advancing years the collateral circulation becomes more elaborate, which suggests that a man of sixty is better prepared to compensate for a coronary lesion than one of forty. This is borne out by clinical experience. For example, one is reminded of the serious prognosis in individuals in the early forties who have angina pectoris as a manifestation of coronary disease, whereas patients developing angina beyond fifty may, by limiting their activities, live for many years. Besides age as a factor in coronary anastomosis, we have another important factor, namely, the suddenness with which the vessel is occluded. An acute interruption of the blood supply through the main stem of one coronary artery may cause acute circulatory collapse and often sudden death, whereas the same lesion developing gradually is accompanied by no symptoms. For example, syphilitic changes at the root of the aorta commonly lead to narrowing or to complete obliteration of the mouths of the coronaries, but the occluding process is a gradual one and no signs of myocardial infarction appear. As Oberhelman and Le Count have shown in such cases, an elaborate capillary anastomosis is developed between the two coronary arteries which is usually adequate to prevent infarction of the heart muscle. Still another important factor influencing compensation in coronary disease is the Thebesian system of vessels, those tiny channels which communicate directly with the heart chambers. The true significance of these vessels was demonstrated by Wearn of Boston, who in an ingenious set of experiments showed a direct communication between the coronary arteries and the chambers of the heart through the Thebesian vessels. As Wearn mentions, the best evidence that the Thebesian vessels actually take over the function of the coronary arteries is supplied by observations on patients with complete obliteration of both coronary arteries by syphilis. I have seen three such instances. Syphilitic occlusion of the coronaries is a slow process in most cases, so that ample

time is afforded for the development of collateral circulation. Other illustrations of the adaptation of the organism to disturbances in physiology might be cited. For example the lung air in a typical case of chronic pulmonary emphysema shows a concentration of carbon-dioxide which if suddenly introduced in a normal individual would cause profound discomfort, while the emphysema patient at rest may be quite comfortable and be exchanging little more air per minute than a normal individual.

From what has been said, it is apparent that the functional significance of coronary arteriosclerosis will depend to a large extent upon the capacity of the heart to compensate for the lesion. This in turn depends on the collateral circulation that may be present at the time or that may develop subsequent to the coronary lesion. Extensive anastomosis between the two coronaries and the Thebesian vessels may develop provided the one important factor, the element of time, is present. Besides the time element, we have such factors as 1. The caliber of the occluded vessel—the larger the artery the greater will be the area of myocardium deprived of blood supply. 2. The extent of anastomosis between the two coronaries existing at the time of the occlusion, and 3. The condition of the heart muscle. A myocardium damaged from rheumatic infection or previous coronary disease, or one partially exhausted from prolonged hypertension is less likely to tolerate a coronary accident than a relatively sound muscle.

Such are some of the known factors to be evaluated in cases of coronary disease. It is not remarkable, therefore, that the clinical picture should vary in different patients, or that advanced coronary disease should be found at autopsy in individuals who had, during life, no signs of heart disease.

*Coronary Thrombosis.* No attempt is made in this paper to give a detailed account of coronary thrombosis. Only the more conspicuous features of the subject are discussed, that they may be contrasted with the more chronic type of coronary disease; the type that may appear insidiously with symptoms of progressive myocardial failure, which continues over a period of months or even years.

When a man beyond forty and in his usual health is seized with a severe attack of substernal

pain, which is accompanied by shock, circulatory collapse and dyspnea, we may assume that something definite has happened in the heart. If the patient dies in a few minutes, we may be reasonably sure that he has had a circulatory accident—most likely coronary thrombosis. Indeed, more than 90 per cent. of all individuals dying suddenly, that is, within five to ten minutes from the time they considered themselves in their customary health, will show at autopsy a cardiac lesion, coronary disease and thrombosis, or rupture of the heart at the site of an old or recent infarct. In a few cases a ruptured aorta is found. Very rarely does cerebral hemorrhage kill in a few minutes. In spite of these well established facts, we still find such erroneous diagnoses as “acute indigestion” or “ptomaine poisoning” given as the cause of sudden death.

The fatal circulatory collapse in coronary thrombosis probably is due to ventricular fibrillation from sudden ischemia of the heart muscle. Such cases are of little clinical interest, as they are usually dead when seen by the physician. I have seen a few instances in which an accurate diagnosis was important from a medico-legal standpoint. For example, a workman fell from a ladder, sustaining a slight injury to the scalp. It was maintained that the fall was the direct cause of death, whereas the autopsy showed a recent thrombosis of the main stem of the right coronary artery. In another instance of coronary thrombosis of the left vessel, the patient collapsed while ascending a stair and in falling injured his head. An insurance company with whom he carried a large accident policy contested the claim on the basis that death was due to heart disease, which was proved to be the case by the post mortem findings.

*Sudden Onset with Anginal Pain and Circulatory Collapse.* Under this heading come the majority of cases of coronary thrombosis that survive the initial attack. The patient, usually a male beyond forty, is seized with an acute pain in the chest, more frequently under the sternum. In more than half the cases the pain is not definitely precipitated by exertion but appears during sleep or while the patient is resting after a meal. Shortly after the onset one is impressed by the signs of shock and circulatory collapse; ashen cyanosis, cold perspiration, rapid, thready pulse, low blood pressure, feeble heart sounds



and some degree of dyspnea. This picture, particularly when the pain is referred to the upper abdomen, suggests an acute surgical condition. The cardiac mechanism frequently remains normal, although irregularities due to extra systoles or auricular fibrillation are sometimes seen. Moisture at the lung bases and a swollen tender liver are common as early signs of congestive heart failure.

*Clinical Course.* This varies widely. The patient may not recover from shock and die within an hour or two after the attack. He may rally temporarily and then die suddenly. In some instances the signs of congestion with edema and hydrothorax may gradually increase over a period of days or weeks and death result from progressive circulatory failure.

Surviving 24 to 36 hours, the subject usually has a moderate elevation in temperature (99-103F.) for several days, accompanied by leucocytosis. During this period a pericardial friction rub may be heard for a few hours only, in some cases; in others, it persists for several days. If the signs of marked congestive failure do not appear the patient usually has a slow convalescence with a return of the blood pressure to or near normal, the heart sounds improve, and a careful physical examination may reveal nothing unusual. However, the electrocardiograms, both at this stage and as early as a few hours after the initial seizure, may give indisputable evidence of coronary accident.

After the diagnosis of coronary thrombosis is established the therapeutic indications are clear. Excluding embolic accidents from the dislodgement of intracardiac thrombi, the patient's future depends on the healing of the infarcted area in the heart wall. This requires time, and at least a month of absolute rest in bed is imperative. To relinquish this rule may be attended by serious circumstances. For example, I saw a physician a few minutes after the onset of a typical attack of coronary thrombosis which required a grain of morphin hypodermically to control the initial pain. He recovered from shock and after ten days of absolute rest in bed he appeared quite normal. In spite of the fact that he understood the gravity of the situation, on the eleventh day he walked a few steps to the bathroom and fell over dead. Had he remained in bed he might have recovered.

To illustrate the more important features of chronic coronary disease the clinical and pathological findings of the following two cases may be cited. In Case 1 the coronary arteries showed the usual changes of simple arteriosclerosis with calcification. Case 2 is an example of the unusual picture of extensive fibrosis of the vessel wall without calcification.

Case 1. The patient, G. M., a white male, aged 45, occupied as a salesman, was admitted to the Cleveland City Hospital, April, 1926, complaining of breathlessness, dropsy and pain in the abdomen. He was in good health until November, 1925, when he first noticed undue shortness of breath on exertion. This gradually increased, edema of the feet appeared, which progressed until his admission to the hospital, when he was waterlogged and very uncomfortable from dyspnea.

Family history: The only item of interest is that his father died suddenly at 45 of what was called "acute indigestion." He had four brothers and three sisters living and well.

Past history: The patient has been singularly free of infections, and always able to work since he can remember. He gives no history of rheumatic infections or syphilis. He is married and has three healthy children.

Physical examination: Shows a well developed man in great respiratory distress. There is an apparent diminution in vital capacity which actually measures 1400 c.c. The left chest is flat to percussion as high as the clavicle and there is also dullness at the right base. The heart is not enlarged and there is no abnormal precordial activity. Heart sounds are diminished but no murmurs are audible. Cardiac mechanism is normal. The pulse is small volume, and the B.P. is 140/80. There is marked edema of both lower extremities and over the sacrum. The urine contains a heavy trace of albumin and granular casts. There is no anemia and the blood Wassermann is negative. Blood urea is 43 mgs. per 100 c.c.

After a month's rest in bed and repeated thoracenteses, the patient gradually recovered to the point of getting about. He left the hospital against advice and was out only a few days when he returned in the same condition as on the previous admission. After two months he gradually improved and was again able to be up. On July 29 he left the hospital and was not seen until December 19, when he was again admitted with all the signs of advanced heart failure. Death occurred February 15, 1927, or 15 months after the onset of symptoms.

Autopsy findings: The heart in situ appeared normal in size and position. On opening the pericardium there was noted an aneurysmal bulging of the left ventricular wall, about the size of a hen's egg, in the region of the apex. To palpation this area seemed thin and suggested at once a weakness in the heart wall. The heart empty of blood weighed 300 grams. The endocardium was smooth and glistening except over

the interventricular septum and the apex of the left ventricle where it was a dull gray color. The heart valves were free of disease. On the posterior wall of the left ventricle and involving the septum there was an area 5 cm. in diameter, which was entirely fibrosed. Patchy areas of fibrosis were scattered throughout the muscle of both ventricles, and in the region of the apex the muscle was entirely replaced by fibrous tissue.

The left coronary artery about 2 cm. from the mouth was stony hard for a distance of 3 cm. with complete obliteration of the lumen. No fresh thrombus was seen. The right coronary artery was markedly calcified and a fresh thrombus completely obstructing the lumen was found 2 cm. from the mouth.

The aorta showed extensive arteriosclerotic changes but no signs of syphilis. There was a bilateral hydrothorax and ascites with marked chronic passive congestion of all the organs.

Case No. 2. A male, colored, aged 38, and occupied as a waiter, was admitted to the Cleveland City Hospital March 2, 1926, complaining of shortness of breath and "stomach trouble."

Past history: There was a vague history of a chancre about ten years ago, also at about the same time he had what was called yellow fever. Since then he has not been ill.

Present illness: This dates from October, 1923, or five months before admission, but he continued at work until February, 1926, when he was forced to give up on account of breathlessness. At no time had he noticed precordial pain.

Physical examination: Resting in bed the patient was comfortable, but the slightest exertion caused definite respiratory distress. The heart was normal in size and configuration under the fluoroscope. The lungs showed no congestion and the vital capacity was 4600 c.c. No edema was demonstrable. The heart sounds were diminished in intensity but no murmurs were audible. The pulse was small in volume and the systolic blood pressure was between 90 and 100 mm. Hg. on several occasions. There was no fever or anemia, the urine was normal, and the blood Wassermann was anti-complimentary. The electrocardiogram showed inverted T-waves in leads two and three.

With moderate doses of digitalis and bed rest for two weeks, the patient was able to get about comfortably, but the heart sounds did not change and the blood pressure remained low. He was discharged March 23 to report to the outpatient department. Throughout the summer of 1926 he gradually failed and in August edema of the ankles and moisture at the lung bases appeared. When re-admitted to the hospital the heart was definitely enlarged both to the right and left, and a loud blowing systolic murmur was heard at the apex. Cheyne-Stokes breathing was present most of the time. In spite of treatment, the signs of congestive heart failure increased. The precordial activity and heart sounds grew feebler, a gallop rhythm appeared, the systolic blood pressure

fell to 80 mm. and toward the end the patient became very dropsical. In this condition he died November 2, 1926, thirteen months after the onset of symptoms.

Autopsy findings: The heart weighed 500 grams. All chambers showed moderate dilatation. The cardiac valves were not diseased and the aorta was smooth with slight intimal sclerosis but no evidence of syphilis. Almost the whole anterior wall of the left ventricle was fibrous tissue, which from the endocardial surface appeared as a pearly white mass. Throughout the remainder of the left ventricular muscle there were patchy areas of fibrosis. The left coronary artery was thickened throughout its course. About 2.5 cm. from the mouth and for a distance of 1.5 cm. the artery felt like a fibrous cord. Section through this area showed the lumen so reduced that it would not admit a fine probe. It was, however, passable for a horse-hair. The intima everywhere was smooth and no calcium deposits were present. It was apparent that the obstruction in this case was due to the uniform thickening of the wall, which had simply encroached upon the lumen of the vessel.

The right coronary showed the same sclerotic changes but not as marked, so that the lumen of the vessel was not appreciably reduced. Apart from the chronic passive congestion, the other organs showed nothing unusual.

The above cases illustrate several important points which may be emphasized here. The first symptoms of coronary disease may be those of impaired myocardial function, such as shortness of breath on exertion. Later, more obvious signs of heart disease appear, as edema, congestion of the lungs, etc. This picture developing more or less insidiously in a patient in the forties may be difficult to explain, particularly, if there is no hypertension and the patient previously has enjoyed good health. That the heart is failing is clear—but why? The usual answer is chronic myocarditis and this diagnosis is made, although clinically it explains nothing and should, as Cabot says, be dropped from our diagnostic terminology. It is unfortunate that the term "chronic myocarditis" carries with it the implication that chronic infection elsewhere in the body is responsible for the myocardial damage. This view is held by many physicians in spite of the fact that there is, so far as I know, no experimental or clinical evidence to substantiate it. Certainly in patients suffering from coronary disease efforts to eliminate focal infection often lead to needless and indeed harmful operations. True, the removal of teeth, tonsils, etc., may be indicated, but that such procedures will



influence the progress of coronary disease is a far-fetched assumption.

#### SUMMARY

Coronary arteriosclerosis, impairing the blood supply to the heart muscle, is a common cause of death, particularly in males beyond forty years of age. The character of the clinical picture associated with the coronary disease varies widely and depends to a large extent upon the development of collateral channels in the heart, a process which requires time. Thus a sudden block of the coronary artery as happens in thrombosis may be instantly fatal, whereas a gradual occlusion may cause no symptoms.

The clinical and post mortem findings in two cases are given to illustrate the fact that coronary disease may give the clinical picture of slowly progressive myocardial insufficiency over a period of months.  
(Cleveland City Hospital.

#### DISCUSSION

Dr. I. F. Harter, Stronghurst: I was very much interested in the discussion of this subject, and I should have been pleased to have heard the doctor's discussion on treatment to a greater extent than what he gave.

I have a patient, a man forty-eight years of age. I was called to attend him one morning about four months ago and found him in circulatory collapse with an enlarged heart, very irregular, and every two or three minutes he would lose consciousness. I was very much alarmed about his condition and expected at least heart failure at any time.

In a few hours he began to revive and continued to improve. I kept him in bed for two or three weeks; he was a man of a highly nervous temperament, business man by occupation, and I could not keep him in bed any longer. He said he must get back to his business.

Wassermann test was negative. X-ray films of the teeth disclosed two impacted third molars, one of which was producing some absorption of one of the roots of the molar in front, and we have been unable to decide in his case what was the cause of his coronary trouble. I should like to have the opinion of Dr. Scott.

Dr. Charles Wiley, Chicago: The startling thing to me from the standpoint of Dr. Scott's cases is that in his early coronary thrombosis he gets this beautiful picture with the T-wave coming off the R spike halfway down, and in these other two cases this Negro and the white man, his electrocardiograph was absolutely negative.

I will say this, that in coronary disease, from an observation covering autopsy records and electrocardiography, the electrocardiograph is a positive finding in about seventy-five to eighty per cent. of these cases. The unfortunate condition is, and perhaps it is all we can expect, the electrocardiograph we get is usually the one which the doctor showed last. That is, a T-wave slurring down below the lead line in lead one and two and above the lead line in the third lead.

These are the cases that you can definitely diagnose as chronic fibrosis, or chronic coronary disease. I think, if anything is certainly significant, it is the electro-cardiograph on these coronary cases.

Dr. R. O. Stites, Industry: I am not sufficiently accomplished to discuss this paper from a scientific standpoint. But I have in mind a subject on which we are going to be investigated because we are not doing something for these hearts. If a person becomes ill with suspect pneumonia, I personally am unable to make a sure diagnosis for at least 72 hours. I am forced by the Public Health Department to report all pneumonia in 12 hours. If I have a suspect pneumonia die suddenly before establishing a diagnosis sometimes I have to call it myocarditis or else face a fine from the Public Health Department. I think a lot of our heart disease increase is because we are forced to give a false report on our death certificates. When your practice extends over nine townships like mine does, with nine different places to report reportable diseases and those of the family who are ill do not know the clerk of the township, and if they do know his name they do not know his address, how are we to comply with the Department of Health requirements? I personally think that our heart disease increase is due slightly to better diagnosis, but mostly due to the fact as mentioned. It is sad that it is so, but facts are facts.

Dr. R. W. Scott, Cleveland, Ohio: The question that the first discussant puts involves the whole subject of the cause of human arteriosclerosis. This, as I indicated in my paper, is an unsolved problem at the present time. That arteriosclerotic changes in blood vessels are associated with age—the wear and tear of living—and that they may be influenced by heredity—are conclusions which have received wide acceptance. Further speculation in the light of our present knowledge is admittedly hazardous. But one question which seems to me to be worthy of consideration is this: May not the fact that more people are reaching adult years today than ever before—the arteriosclerotic age, so to speak—have an important bearing on the increasing incidence of death from arterial disease?

My remarks concerning the electrocardiograms in the two patients whose histories I presented in brief were apparently ambiguous. The records were not normal but they were not sufficiently characteristic of coronary disease to be of any value in the ante mortem diagnosis.

In reply to the question asked by the doctor concerning his patient's clinical picture, I will say that I

hesitate to speculate on what may be the cause of the difficulty. As you all know, no matter how carefully one may study heart cases clinically, there is a certain number in whom a correct ante mortem diagnosis is not made.

## THE SURGICAL MANAGEMENT OF LESIONS PECULIAR TO DIABETES MELLITUS\*

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The problems confronting the surgeon in the treatment of a patient suffering from diabetes mellitus together with infection or another surgical disease always involves the consideration of three disease processes. First of all are the changes characteristic of diabetes mellitus as a chronic disease; secondly is the presence of acid intoxications, commonly called acidosis; and thirdly is the acute disease, or pathological condition which the surgeon is asked to take care of. If we examine these three components we find that there are two acute rapidly moving processes for which there are specific therapeutic measures, namely, the acid intoxication and the acute surgical condition. The first group of changes are chronic and permanent and are of immediate importance only in that they tell us that this patient has arteriosclerosis with the marked fatty changes characteristic in the lipemia of diabetes mellitus, and with the group of organic changes that frequently occur concomitantly with arteriosclerosis, namely, heart, kidney, and cerebral disease. Bearing these chronic changes in mind as a background, we proceed to solve the two acute transitory conditions.

The discovery of insulin has swung the attitude of the surgeon towards diabetes from pessimism to optimism, and as is usually the case in new medical discoveries the pendulum has swung too far and too much attention and dependence is placed on the new discovery. In addition to the proper use of insulin in the case of a surgical condition in diabetes we feel that there are other refinements of treatment that are important to bear in mind so as not to rely only on insulin and forget some of the fundamental pathology and physiology that determine surgical judgment.

Publications by various clinics and clinicians assert that the discovery of insulin has made surgical procedures in diabetics as safe as in non-diabetics. Judd and Wilder<sup>1</sup> state that "no patient has been refused necessary surgical procedures because of diabetes;" but add "It is still possible that diabetes contributes to death in ways that we now have no means of measuring." Foster gives a reduction of from 40 to 12 per cent. in diabetic infections.

We do not, therefore, wish to disregard the fact that insulin, by controlling acid intoxication, is an important adjunct in reducing the operative mortality in diabetics. In pre-insulin days every diabetic case needing surgical intervention was in great danger of developing diabetic coma, whereas, we see today few fatalities after operation in which diabetic coma is the factor in causing death.

The writer's reaction on being asked to treat a patient surgically is as follows: First, the patient because of his chronic diabetes probably has arteriosclerosis, associated with marked fatty changes in the lining of the arteries, and because of such changes is predisposed to what the surgeon fears, the development of thrombosis and embolism. Inasmuch as we do not have specific measures to combat the predisposing cause, we must trust to Providence. In determining the changes due to diabetes there are probably chronic alterations in the myocardium and kidneys and if such are found we can delegate the problem to the internist who can determine the operative risk.

The second problem that presents itself is the state of the acid base balance. This is important because it is apparent that when the acid base balance is upset in a diabetic that that patient has more susceptibility to infection. N. B. Foster<sup>2</sup> states that if surgery is performed on a patient with a blood sugar higher than 350 and a CO<sub>2</sub> combining power lower than 35 volumes per cent. that the operative procedure ends in a sepsis. Some have it that the high blood sugar is the important predisposing element to infection, but it is reasonable to suppose that the mechanism involved is more complicated. We know that the normal defense mechanisms are reacting leucocytes, fixed tissue cells, an intact mechanism for the production of antibodies and the ability of the body to produce a maximum degree of hyperemia. It is very prob-

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able that in the presence of acid intoxication that the efficiency of the total defense mechanism is reduced.

It has sometimes been stated that acidosis in diabetes develops as the result of surgical interference. The writer pictures the diabetic as a person who already is in a state of chronic acid intoxication or one whose defense mechanism against intoxication has been depleted to a large extent and therefore it might be said that he is in a latent state of acid intoxication. Also each new disease which attacks such a patient brings him closer to a state of manifest acid intoxication even before the surgeon sees him.

This view explains the susceptibility of the diabetic to infection. Whatever the cause may be the surgeon knows that the important thing is to ask the internist to adjust the acid base balance as best he can.

Infections in a diabetic decrease sugar tolerance necessitating larger doses of insulin. In some infections insulin seems to become inactive. We recall a patient at the Cook County Hospital who received 300 units in 24 hours with no abatement of the infection nor reduction of the acidosis and hyperglycemia. Some consider that insulin becomes inactive in the presence of sepsis. This question is speculative, since besides the marked reduction in sugar tolerance it is possible that a diabetic may terminate with an overwhelming infection as even a non-diabetic does.

Having referred to above changes in diabetes, namely, the permanent pathological changes in the viscera and arteries, the arteriosclerosis, degenerations, tendency to infections, deficient reaction to infection and a greater susceptibility to thrombosis and embolism, we can state the surgical problems of the diabetic.

The internist should manage the medical side of the case. In the case of emergency the surgeon should know that the index of the  $\text{CO}_2$  combining power of the blood measures the degree of acid intoxication and should also know the sugar concentration of the blood to know how freely insulin can be used. The surgeon knowing these two measurements can then safely determine the dose of insulin and the necessity for supplying carbohydrates.

Where such is not practicably determined by urine examination he can combat the acidosis by

burning known sugar with insulin using preferably 1 unit of insulin to 2 gm. of sugar, giving orange juice which is 10 per cent. sugar or glucose in proctodolysis.

Any surgical procedure which may produce acidosis must be scrutinized by the surgeon. These are 1. the anesthetic, 2. hemorrhage, 3. shock, 4. vomiting, 5. dehydration, 6. starvation, 7. disturbed renal function, 8. infection, and 9. psychic disturbance. We will discuss these under the caption of 1. The Anesthetic, 2. Technique. 3, Post-Operative, and later refer to a short discussion of diabetic infections and lesions of the lower extremity.

*The Anesthetic.*<sup>8</sup> Any inhalation anesthetic may produce acidosis by anoxemia, or acapnia. This includes ether, chloroform, nitrous oxide and ethylene.

Ether and chloroform also produce acidosis by direct action on renal function and being liquid solvents by inhibiting sugar and fat metabolism. Of the inhalation anesthetics ethylene<sup>3, 4, 5</sup> is the best, producing very slight changes in the liver and kidney, and if given with oxygen so as to prevent anoxemia, is ideal. For abdominal surgery it does not afford sufficient relaxation and since we cannot use the cautery in disposing of cut nerves we object to it in leg amputations.

Local anesthetic formerly was our ideal and the writer went so far as to perform twelve thigh amputations by blocking the sciatics, obturator, and other nerves to the thigh. We find, however, that local anesthesia requires morphin and in thigh amputations also hyoscin and we find by investigation that these so greatly alter renal function (hyoscin also producing organic changes) that we have gradually become less enthusiastic in the use of local anesthesia in diabetics and have entirely discarded the use of hyoscin.

Spinal anesthesia with the recent development in its control is a new anesthetic and its safety as compared to other anesthetics is still in question. The writer having used it in over 100 major operative procedures, including gastric resection, gall bladder work, appendicitis, considers that this anesthetic is especially indicated in diabetes, in any operation under the diaphragm. When used in abdominal surgery it has the following advantage: 1. perfect relaxation,

2. reduces retraction and trauma, 3. reduces the spread of infection by peristaltic gut in acute appendicitis. The disadvantage aside from its questionable safety is the circulatory depression. I have had such in upper abdominal work with the heavy solution but in using spinocaine for appendectomies, intestinal obstructions and thigh amputations we have avoided this handicap. In using spinal anesthesia in diabetics I never use hyoscin and only a dose of morphin sulphate gr. 1/6. The acidosis of diabetes inhibits the perception of pain and this serves in discharging opiates. Spinal anesthesia in our experience is the ideal narcosis for diabetic surgery because it does not affect carbohydrate and fat metabolism and because it allows surgery to be done with a minimum amount of trauma.

*Technique—Post Operative Treatment.* It is needless to say that respect for tissue should be employed in all operations. I will reaffirm the remarks of all writers on this subject that trauma produces shock, shock acidosis, and acidosis coma. The surgeon's problem in post-operative treatment is to aid the internist by controlling the acidosis. As in other post-operative procedures the surgeon must combat dehydration by the use of fluids per mouth, per rectum or by hypodermoclysis; by control of vomiting, using gastric lavage following laparotomies. Post-operatively the diabetic should have about 70 to 80 grams of sugar per day, given preferably per mouth, but if impossible, by proctoclysis of 10 per cent. glucose.

We determine in emergencies the post-operative dosage of insulin by frequent urine analysis regarding acetone and diacetic as the index for more carbohydrate combustion by means of insulin. In many of our cases we have given over 100 to 150 units per day until the internist came to our aid. Milk and orange juice have been our greatest aids post-operatively until the patient could take more solid food.

*Diabetic Infections.* Pyogenic infection is characterized by the destruction of tissue by the toxin of bacteria and by the reaction of the body to their destruction. In the normal individual active hyperemia and suppuration characterize pyogenic infection and suppuration is the result of the reaction of the body to infection. In the diabetic the reaction of the body is slight and therefore the predominating characteristic of the

inflamed regions is necrosis. I do not refer to circulatory occlusion with dry gangrene but to abscess, carbuncles and fascial plane infections to which the diabetic is often heir. This characteristic, together with the fact that patients with acid intoxication suffer less pain than normal individuals, makes the diagnosis of the extent and nature of the infection difficult. No surgeon desires to incise an acute lymphangitis, and still above factors make matters difficult. In our work at the Cook County Hospital we have usually been deceived in the opposite direction by finding under a visible redness and fluctuating area a still deeper and more extensive necrosis and suppuration of fascia, tendon and bone.

In dealing with suppurative processes in a diabetic, whether a carbuncle or an appendicitis, we see no reason for delaying surgical interference. Infections in diabetics require promptness and the patient should not be allowed to develop an extensive infection or sepsis in order to combat the acidosis. Both can be taken care of simultaneously.

At this point we must mention the difficulty in sometimes differentiating an acute surgical abdomen from impending coma. Knowing that such is often difficult the surgeon must exactly weigh the degree of acidosis,  $\text{CO}_2$  combining power, blood sugar against leucocytes, abdominal rigidity and in some cases be aided by rectal examination.

*Lesions of Lower Extremities.* The lower extremities present lesions which compose one of the greatest problems in diabetic surgery because of the presence of arteriosclerosis and lipemia. Because of the impairment of the defense mechanism against infection the diabetic is subject to various lesions, especially in the feet, varying from ordinary infection with good localization to a condition of gangrene or even to a combination of infection and gangrene. By having a conception of the pathology of diabetes there is no necessity in a classification since the determination of treatment will depend on our previous clinical experience with these conditions, and by accurate tests of the circulation in any given case.

Prophylaxis of these lesions include many hygienic measures such as careful paring of the nails, avoidance of trauma from shoes, the early



treatment of ringworm infections of the toes, and even the care of the vessels by means of Buerger's exercises.

In every case in which an infection or in which circulatory disturbances have occurred a study of the circulation of the limb must be made. McKittrick and Root<sup>6</sup> truthfully state that the foot with localized pus or osteomyelitis in the absence of gangrene is a foot with fairly satisfactory circulation, otherwise localization of the infection would not have taken place. We find, however, that the diagnosis of localized infection is deceptive and that frequently there is a process of extension, non-localization and even gangrene under an apparently localized collection of pus. If a study of the circulation be made the additional information will often determine whether or whether not to amputate.

Diabetic gangrene itself has been called arteriosclerotic gangrene. This is partly true but the additional conception must be held that although the arteriosclerosis process is predominant, that the lipemic condition of the diabetic adds to the picture a condition in which there are additional degenerative changes of a more marked degree in the lining of the vessel so that perhaps diabetic gangrenes are accompanied more often by thrombi and rapid extension of thrombosis.

Given any lesion of the lower extremity in diabetes the question arises whether or whether not to amputate. Our experience in this matter is based on about 85 diabetic gangrene amputations and on observing clinically the course of a number in which we did not amputate.

There are certain types of gangrene which do better without amputation than with. If the gangrene is dry, shows a good defense reaction at the line of demarcation and there is present no sign of infection and if the patient is well along in years, shows evidence of heart and renal disease, our experience has been that with careful care of the gangrene the patient's life will probably be longer than if the chance is taken to amputate. If, however, the patient is only in the early fifties and the lesion is early, showing, however, occlusion of the three vessels of the leg up to the popliteal space, an amputation can be more safely advised.

Although the vessels may be occluded to the popliteal space there is always the possibility of

development of compensatory collateral circulation and this point is to be considered in the question of amputation, especially in the first type of case mentioned above. If at any time infection is added to a gangrene or the gangrene is accompanied with infection or the infection shows no localization, amputation is advised and in these cases preferably at the knee or above, unless we feel assured by our tests that the circulation is good or that the infection has not extended above the upper third of the leg.

There are various methods to determine the permeability of the vessels. 1. Physical examination. Determine the popliteal when the patient is lying on the abdomen and the leg is slightly flexed. The posterior tibial can be palpated behind the internal malleolus and the dorsalis pedis can be palpated laterally alongside the extensor hallucis longus. In order not to confuse the examiner's pulse the finger of the other hand should be held on the examiner's radial pulse. Palpation of the leg and comparing the same with the thigh or the other leg may show variation in temperature. Evidence of gangrene involving both the posterior tibial and dorsalis pedis indicates occlusion up to the bifurcation of the popliteal line. 2. X-ray examination of the lower part of the leg. The importance of this, however, is not to be overemphasized since marked calcification and arteriosclerosis may be present without evidence of gangrene. 3. For the past two years we have used the Pachon oscillometer.<sup>7</sup> The amplitude of the oscillations reflect the amplitude of the pulse and when occlusion has occurred the reading is markedly diminished. Since in our tests made on normals our instrument shows an oscillation amplitude of from 3 to 7 in normal; we determine occlusion when the reading is around 1 to 2 or less. The oscillometer, however, although it indicates the permeability of the vessel gives us no information as regards the collateral circulation. 4. There are other tests which we routinely employ. McKittrick and Root do not value as very efficient the Moskowicz test. We have used this test on every case and feel that it has some value. 5. There are other methods to determine the circulation such as the calorimetric test. We have up to the present writing no experience with these methods. If above tests show occlusion as high as the junction of the

middle and upper third of the leg, there is no gain by any amputation except one through the knee-joint or the lower thigh. If the popliteal is weak we advise thigh amputation. In some thigh amputations we have seen the occlusion even in the femoral but have ultimately obtained union after removing localized areas of necrosis.

We were very much disappointed in the mortality statistics following amputation. Some clinics give as low as 12 to 15 per cent. Our mortality rate at the Cook County Hospital in amputating diabetic gangrene has been 65 to 70 per cent. and can be reduced only when we operate early gangrenes and when we refuse amputation to those with evidence of marked heart and kidney disease. Our technique has been carefully planned to avoid any possible danger to this type of case. The cause of death in these cases has not been diabetic coma. Many of them survived the amputation for a week, dying of cardiac failure and with bronchial pneumonia. Some die of sepsis without much temperature or evidence of sepsis. It is possible that the very low grade of infection at the site of amputation is sufficient to bring on cardiac failure in a heart already damaged by a long standing coronary disease. To reduce the mortality in these amputations we have adopted the following technique: We refuse to amputate if the blood sugar is over 200 or carbon-dioxide combining power is under 40. Preparatory to the amputation digitalis is given for five days where possible. No preliminary scopolamin is allowed. Spinal anesthesia with 100 milligrams of ephedrine is used before the anesthetic. If the internist's estimate of the heart is such that he could not risk the use of ephedrine the operator should not risk amputation unless as a measure of last resort in the presence of severe infection.

In developing technique for leg amputation whether it be a Gritti-Stokes, the Carden, through the condyle of the femur, or the lower thigh, the following principles are to be borne in mind: 1. In cutting muscle flaps no ragged edges should be produced in order to avoid infection. 2. Sutures should not be tied too tightly. 3. If the patient is a poor risk, greater care should be used in expediting the operation than in worrying about the artificial limb. 4. No tourniquet must be employed. 5. Tissue

must show a blood supply. For this reason we do not always do the Gritti-Stokes, employing this method only in younger individuals where there is some possibility of wearing an artificial limb. In older individuals we prefer a lower thigh amputation and in doing this we obtain much cleaner flaps by the fixation method, cutting with great rapidity, long anterior and posterior flaps, the anterior one being cut first; the bone is then sawed, the femoral ligated, and then the posterior flap is formed. This procedure even when not done with any haste but with great care should not take over five minutes. We have never split the femoral or had difficulty with hemostasis of this vessel. After cauterizing the sciatic we make a closure by sewing fascia to fascia and skin with silkworm gut. The entire procedure requires only 20 to 25 minutes. There is no need for haste. Such was the case when ether was employed and even in doing our early cases where we used local anesthesia. With spinal anesthesia or ethylene one can use meticulous technique in going through this procedure. The after treatment is important. The internist provides care for the heart and the diabetes. The surgeon must get his patient out of bed early since these old arteriosclerotics do not fare well by prolonged confinement to bed. We allow them to sit up on the second day and endeavor to encourage arm exercises. Following a thigh amputation it is well to give hypodermocystis in addition to the glucose used by the internist in proctoclysis, or by mouth.

#### CONCLUSIONS

1. Surgical judgment must not be swayed by too great a reliance on the use of insulin but must bear in mind the pathological changes which have occurred in the diabetic, and by the existing state of acid intoxication.
2. The surgeon should know how to take care of an emergency in diabetes but should not burden himself with the medical care.
3. It is probable that acid intoxication is the cause for the failure of the organism in its defense against infection.
4. The problem of the diabetic surgeon is to do nothing which disturbs the base balance and must make a careful choice of anesthetic, avoid



trauma, hemorrhage, shock, dehydration, and use intelligent treatment of infection.

5. Diabetic infections have a peculiar tendency to non-localization and necrosis, and are often deceptive because of the absence of pain.

6. Each lesion of the extremity requires a careful study of the circulation, of the general condition of the patient to stand an amputation. Amputation is not always required in gangrene but should be done early in the presence of infection or if the individual is young and the gangrene is early.

7. Spinal anesthesia with low thigh amputations probably afford the lowest mortality and the best wound repair.

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#### CONTROL OF DIPHTHERIA\*

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The author of this paper does not claim to have accomplished enough, in his own right, to merit being drafted by the secretary to write upon the subject. This paper must therefore be largely a compilation, and the result of deductions from limited, local statistical data. It may, perhaps, serve a useful purpose by calling attention to certain phases of the control of diphtheria. Noteworthy, however, is the fact that the district over which I happen to serve as health commissioner along with probably some others, has the enviable distinction of not having had even a case of diphtheria in 2½ years and no death in 3½ years. This district in-

cludes the cities of LaSalle, Peru and Oglesby, Illinois, with a combined population of approximately 30,000.

*To What Is This Due?* If toxin-antitoxin had been used extensively we would be very certain of the cause of the decline, but its use has been practically nil. Neither have our surrounding cities used it to the extent that we could be protected through them. Chicago, a comparative neighbor, during this period has had a considerable rise in mortality and an increase in the case fatality rate. Down state, as a whole, had a slight rise in 1927, and likewise the nation as a whole had an increase in mortality during the same period. Of course, an analysis of this national increase in mortality, during 1927, shows that a few large cities like Chicago, New York and Pittsburg are largely responsible. In other words it is largely an urban increase. However, most of the so-called rural states did show an increase during this year. The year 1928, however, shows quite generally a decrease to a new low level. The Metropolitan Life Insurance Company showed the effect of the increase in 1927 with a rise in mortality per 100,000 insured persons, to 10.2 over 9.5 for the previous year. For the year 1928 the rate fell to 9.4, which is the lowest ever recorded for the company; and the first quarter of the year 1929 gives promise of a continued decrease.

*A Declining Disease.* It is apparent that diphtheria is a declining disease, and has been on the decline for many years before antitoxin was discovered. A reference to the graph, here exhibited, of Chicago's diphtheria mortality from 1856 to 1928 shows three major peaks of about thirty year intervals, but the general trend was downward. One naturally feels that, were it not for antitoxin introduced in 1895, the third peak, with about 1915 as a center, would have begun much sooner and reached a much higher level than it did. Toxin-antitoxin was introduced in Chicago about 1917 to 1918, and it seemed was driving the disease to a new low level, when in 1927 and 1928 it again increased over 60% in incidence and nearly 100% in mortality.

Figures from New York City also show a rapid general decline in diphtheria mortality from 1874 to 1928; influenced markedly by antitoxin after 1898, and much less so by toxin-antitoxin, introduced by Park in the city in 1914

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and into the city schools in 1919. In fact a graph of New York City's diphtheria mortality rate, when the curve is smoothed by five year averages, does not show the influence of toxin-antitoxin.

However, the value of antitoxin and T-A has been demonstrated beyond argument time and time again in cities and institutions and control groups. There seems, however, to be a third factor or group of factors, which is not only influencing the decline of diphtheria, but some other diseases as well, particularly scarlet fever and tuberculosis. Apparently the old idea of the association of some of these diseases with filth was not entirely wrong, and that sanitation in all its phases has had considerable indirect influence. The increasing betterment of the standard of living and well being probably has played a part. Greater dissemination of education and greater activity of health departments generally, particularly in child welfare, aside from immunization, may be a factor. General racial immunity, from long contact with the disease, may also have been developing. All these factors have no doubt tended to protect the individual and increase his resistance.

*Decline in LaSalle, Peru and Oglesby.* Reference to the graph again shows, inserted, a smaller graph of diphtheria mortality for LaSalle, Peru and Oglesby, Ill. It is on the same scale as the larger graph for Chicago, but begins with the year 1915. In this year and for four years thereafter this district had a higher mortality rate than Chicago. In 1915 the Hygienic Institute began to function as a health department for the three cities. The trend of mortality, as shown by the heavy line, drops precipitately. Further, in 1925 the Hygienic Institute greatly expanded the scope of its work. The budget was increased from \$21,000 to \$38,000; four full time officials were secured to head the divisions; the nursing staff was increased from four nurses, without cars, to seven nurses with a car for each; all work was greatly intensified, but particularly the school work, and coincidentally diphtheria disappeared. Practically no T-A. had been given, either before or during this period up to 1929.

Now all this is only suggestive, but I do have some faith in its influence. I am not, however, credulous to the degree that I think diphtheria has been conquered in this manner. I am afraid

that our record will be shattered most any time, and am preparing our schools and, consulting with our physicians for the purpose of inaugurating a consistent and sustained campaign of T-A immunization.

*Toxin-Antitoxin Campaign.* This campaign is to be based upon deductions from our own diphtheria incidence covering a period of 14 years. After all, this is the real way to do any kind of health work, namely, the fitting of general knowledge to local conditions. The table exhibited shows that in the pre-school group the four-year old children had the most cases, followed by a 30% decline in the five-year old children. The effect of school then shows markedly by a 75% increase among the six-year old children, and a continued high incidence up to ten years of age. In the pre-school group there were 229 cases, while in the group from six to ten there were 281 cases. In the group from eleven to fifteen, who are also school children, there were 142 cases. This makes for the school group 423 cases against 229 cases for the pre-school group. For the rest of the age group there was a total of 120 cases. This makes a grand total of 523 cases above the pre-school age and 229 below this age. Now the author believes that if it were not for these 523 cases the 229 cases would not exist. The chance for contagion must be relatively slight in the pre-school group, when we have only 229 cases with a susceptibility percentage of 75 to 85%. This is often even higher in the rural districts. Contrast this with the next age group where we have 281 cases with about one-half the susceptibility percentage. In other words the amount and pressure of contagion immediately upon entering school is very much increased. This is shown vividly in the following summary of the statistical data.

#### DIPHTHERIA INCIDENCE LA SALLE, PERU, OGLESBY, ILL. 1914-29

Years .....	1st 1½	2nd ½	1	2	3	4	5
Cases .....	2	3	20	42	48	67	47
Age Periods .....	229						

Years .....	6	7	8	9	10
Cases .....	82	56	52	57	34
Age Periods .....	281				

Years .....	11-15	16-20	21-25	up
Cases .....	142	46	30	44
Age Periods .....	142	120		

Now the individuals comprising all these groups above the first, not only have a relatively large number of cases, but there must also be



many undiagnosed cases and carriers. Besides this they are very active and are almost entirely responsible for the presence of contagion among the comparatively inactive and helpless pre-school group.

Now the point to all this is that we should center our attention earnestly on this six-year old group of school children, and attempt to immunize 100%. By so doing we will prevent the 523 cases that cause the 229.

Now some will say that you cannot immunize all the 1st grade in school; that it takes from three to six months to gain immunity after they are immunized in school; and that cases will develop before immunity has occurred. We must start somewhere, however, and there is not so much diphtheria every year, but what a start can be made in the first grade. Then if this is done consistently, energetically and regularly each year, there will be a high percentage immunized and no diphtheria to infect each incoming 1st grade, and eventually none to infect the pre-school group. Of course, the 2nd year group should then be Schick tested and the non-immunes immunized or re-immunized. Neither should there be any objection to mothers bringing into the school pre-school children if actual immunization is done in the school. The public or parochial kindergartens, where such exist, should probably receive attention.

It must be remembered, however, that I am proposing to center the attention and effort with the six-year old. Spasmodic campaigns of education and urging of the parents are of relatively little value generally, in so far as getting the end result desired. Efforts centered on the pre-school child are relatively costly and time consuming, because they are scattered and must be sought individually. The school group is therefore the logical one to work with. They are available and old enough to be stimulated directly, and they in turn both stimulate and educate their parents.

*The Plan.* We now have in operation a plan to stimulate the child to go to his family physician. This consists of a school wall chart, visualizing the child's defects, and suitably rewarding him with stars, buttons and ribbons for the removal of his defects and for becoming immunized to smallpox and diphtheria. The plan has not been used long enough to report on its

operation relative to diphtheria immunization. The general scheme, however, is not new, except that we think we have developed some original details and methods of application. The wall chart is here exhibited. If we find that we cannot sufficiently stimulate our children to become immunized against diphtheria by this plan, we will try another. Many of our physicians have agreed then to come into the schools, for a fair remuneration, paid by the Hygienic Institute, and do this work on a larger scale. The parent would still be urged to go to the family doctor, but allowed to accept school service if he so desired.

Personally I feel that this matter of immunization for some diseases bears a different relation to the family physician than does actual illness. With illness there is the urge of ill health, which drives the parent to seek relief, but with immunization there is no such urge. Also with the diminution of case incidence the urge gets less and less, so that the last 10% of a conquerable disease becomes often unconquerable. Epidemics of communicable disease do occur, and when they do they become community problems, whose prevention and control was and is chargeable to the health department. If the physician cannot or will not assume his responsibility, become his family health officer, and get immunization done then the health officer must. I feel the problem will eventually be solved by the two forces recognizing their mutual responsibility to the public and working whole heartedly together.

*Control of Epidemic Diphtheria.* Now I do not intend to cover fully the control of epidemic diphtheria. Every one knows that the case must be found, reported, isolated and quarantined. That the contacts must be carefully supervised and if susceptible immunized. Carriers must be searched for, particularly in the exposed school children and when found, properly restricted. The source must be searched for, the milk pasteurized and all that.

I, however, believe much damage is done by too rigid quarantine, especially of wage earning adults. Too rigid measures, improperly directed, result in a hiding of the case. There is then a hesitancy on the part of the parents to call physicians for fear of the dreaded quarantine. This is fatal in diphtheria and may be true in other

illnesses. If physicians are called they are often seriously urged not to report it to the health department. I believe the wage earning adult, if he does not come into contact with the food supply or with children, and especially if he will agree not to come into intimate contact with the case, will not increase the spread of the so-called childhood diseases. To restrict these workers increases resistance to quarantine, and the result is an increase in the number of unknown cases over which we have no supervision at all. How futile then is our control. There will be some violation of liberal quarantine, but no more than of the so-called rigid type, unless a guard is actually placed at the door. Quarantine, commonly applied is only a seive or net, which catches and holds back the most severe cases, but lets the others get through.

#### SUMMARY

1. General sanitation in all its phases, including personal and eating house sanitation, the general abolition of filth; the attainment of pure water, pasteurization of milk, better housing, better living standards, etc., has probably greatly contributed to the general resistance to many diseases including diphtheria. There may have also been developing a gradual racial immunity to the disease from long contact. Auburn, N. Y., lost its diphtheria, due no doubt to intensive immunization, but what has caused its disappearance for three years from an urban community of 30,000 without immunization?

2. Antitoxin introduced in 1895, placed the natural decline of diphtheria on a much lower level than before that date.

3. Toxin-antitoxin has been proven in certain cities, institutions and control groups, to be an agent that would exterminate diphtheria if universally applied. This application most probably will come through whole hearted cooperation of the physicians and health departments to solve a community problem. The author believes that the six-year old child or the first grade in school is the place to direct an earnest and sustained campaign every year.

4. The usual restrictive measures in epidemic diphtheria should obtain, but with a liberal, properly directed quarantine. The object should be to decrease resistance on the part of the public and thereby find more of the cases to quarantine. The unknown case, unsupervised, is much more

dangerous than the contact liberally and intelligently supervised.

#### DISCUSSION

Dr. V. M. Brian, St. Francisville: The time is now far past, but I want to make one or two remarks on the Doctor's paper. I think Dr. Ailes' paper reflects very creditably on the type of public health work he has been doing in the district comprising of La Salle, Peru and Oglesby.

I was not much surprised at his statement of no deaths, but when he said there had not been a case for the past few years, I could not help wonder if there was not some missed cases or what a close check up on the diphtheritic anti-toxin use in this district would show.

I agree with Dr. Ailes about the six year old group. Down in my district we have 25,000 immunized with toxin-anti-toxin and there has not been a case or death reported in any of these, but not so in the unimmunized group.

The continuous use of toxin-antitoxin in the on coming children is most important. The case and death rate will come up in a very short time unless this procedure is continuous.

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#### THE LABORATORY IN RELATION TO PREVENTIVE MEDICINE\*

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Edward Jenner was a practicing physician in a certain district in England. Smallpox was then a very prevalent and serious disease. Jenner noted that milkmaids whose hands had been infected with cowpox did not take smallpox. To test the matter further, he inoculated a series of human beings with material obtained from the infected milkmaids. These persons acquired cowpox or vaccinia. He noted that such individuals, after exposure, would not take smallpox. These facts are recorded in a classic published by Jenner in 1796.

We have here depicted in a nutshell the entire problem of disease control. Jenner the practitioner, the experimenter, the epidemiologist, the man interested in Public Health problems. In the century or more since that day, differentiation and specialization have occurred to an extreme degree. Today we have practitioners, experimenters in the laboratory, public health officials, and epidemiologists as separate special-

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ists. In the discovery of vaccination by Jenner, the correlation necessary for disease control was done in the brain of this one man. The correlation necessary to solve similar problems today must be made by many men or groups of men cooperating. This is often difficult to do. So it becomes necessary for us to discuss such problems as the relation of the Laboratory to Preventive Medicine.

The field of Public Health occupies a strategic position between the basic sciences on the one hand, and the practical field of Medicine on the other. In the latter field, the practitioner will always dominate the situation. It is he who must first make the diagnosis. Diagnosis should be accurate and the physician must be aided in every way to do this through the application of the fundamental sciences. Diagnosis is the first step in a survey. No campaign can be successfully waged against disease without first knowing where the disease is.

The function of the laboratory in relation to Public Health is twofold. First to apply the methods of the basic sciences to aid in diagnosis. This is a large field in which rapid advances have been made in recent years. The methods have become highly technical. The second function of the laboratory is that of research, a subject to which I will refer later.

In order to make this discussion as pointed as possible, I will now refer to certain diseases attracting the attention of both physicians and public health officials, the solution of which must largely depend upon progress in laboratory methods. We may consider two groups; one in which special problems present themselves, and in solving these we may depend upon the application of recognized principles. The problems in connection with the second group are apparently of a more basic character, and may be solved only by the discovery of new principles or new methods.

In the first group I will briefly refer to epidemic meningitis, hydrophobia, puerperal fever, scarlet fever, and undulant fever as striking examples. More could easily be given.

During the past year *epidemic meningitis* has been alarmingly prevalent in many localities in this country, including Illinois. Little progress has been made in controlling the transmission of this disease. We are familiar with meningococcus carriers, but we have not as yet worked out

a practical method of identification and supervision. The serum therapy of this disease has been disappointing in many localities recently. Some years ago, we were elated over the fact that the mortality in this disease had been reduced from roughly 75% to 25% by intraspinal serum-therapy. Recently in many outbreaks, in spite of the use of serum, the mortality has been as high as before its use. In all probability, the method of preparation of certain sera in common use is at fault. These two problems apparently not fundamentally difficult in connection with meningitis present themselves for immediate solution in the interests of Public Health.

*Hydrophobia* has become increasingly prevalent in many districts, and, because of the serious nature of this disease, has been especially alarming. The results of the preventive treatment have been all that could be expected under the conditions. However, we now know, through long experience, that the Pasteur method of treatment alone will not solve the problem of rabies. This can only be done by the control of the dog; possibly of one or two other animals. As long as we have the problem of the stray dog, so long will outbreaks of hydrophobia appear. Vaccination of dogs against the disease may help, but it will never be completely practical in the United States. This disease furnishes an excellent example of the necessity for the medical profession to cooperate with the public in the eradication of disease. If our anti-vivisectionist friends would only seriously apply themselves to such a problem as the stray dog in a commonsense way, they might easily accomplish something worth while. The research laboratory work in connection with hydrophobia has been a series of brilliant accomplishments. But apparently it can do little more of a fundamental nature that will help. For a long time the profession have known enough to eradicate this disease and have told the people what to do. Yet today it still remains a serious menace.

*Puerperal Sepsis* is another infection altogether too prevalent in this country. Our statistics on the incidence of childbed fever at present are humiliating to American Medicine. Its wide prevalence in the United States as compared with other countries indicates clearly that we are not applying what we know as to its control. This disease furnishes a striking opportunity for proper cooperation between the laboratory and

the clinician. At present, numerous attempts are being made in various laboratories to obtain an effective anti-streptococcic serum. The outlook seems promising, especially in view of the recent discoveries of specific streptococcus toxins and in view of the results obtained with serums in such related diseases as erysipelas and scarlet fever.

The brilliant results of laboratory work by the Dicks in *Scarlet Fever* in the last few years have made us feel more hopeful as to its control. However, as so often happens the brilliant discoveries already made have given rise to numerous problems and difficulties, some of which at least must be overcome before we can consider this problem solved. We await with feverish anticipation the outcome of serum therapy in this disease. The outlook is encouraging but we know, only too well, that so many unforeseen difficulties may arise in connection with the successful serum therapy of any disease, that naturally we assume a conservative attitude toward its specific therapy.

*Undulant Fever.* Little or nothing was known of undulant fever only a few years ago. Now it has suddenly become one of interest to every practitioner and public health official of the State. It presents numerous problems of especial interest to Agriculture and Medicine. It is another one of our so-called human-animal diseases, and presents many of the difficulties often encountered in the control of this group. Fortunately we have a fairly dependable method of laboratory diagnosis to aid the physician, and progress in the campaign against this disease will probably be rapid. It is of interest to point out that this disease and septic sore throat are the two diseases that at present are presenting the most difficult problems to the Certified Dairy Industry. This is on account of the difficulty of detecting the animal carriers.

The above mentioned diseases are examples of infections in which the etiology and transmission are quite definitely known. As stated above, the problems remaining unsolved are not fundamental in character. At least we feel that they can be attacked along well defined and rational lines. There exists a second group of diseases presenting problems which are essentially different from the standpoint of etiology, in that we know practically nothing about their causation. Usually the laboratory problems in such

diseases are difficult of approach. As striking examples we may mention the influenzas, including colds, diabetes, cancer, and the cardio-vascular-renal group. Many more could be given.

In the face of an influenza epidemic today we are practically as helpless as we were a hundred or five hundred years ago. Every public health officer as well as every laboratory worker and physician should consider this disease seriously as a problem for solution. There are difficulties all along the line, from the work of physician who first sees the patient, to the epidemiologist who attempts to determine the laws of the epidemic as well as to the laboratory worker who tries to learn something of its etiology.

*Diabetes* is becoming more and more alarming every year in spite of the discovery of insulin. It is on the increase due, perhaps, to the way our people live; to their sedentary life and to their habits of eating. Some blame our prosperity; others our intemperance. The specific cause of diabetes, of course, is as obscure today as ever. From the Public Health standpoint, this disease is another striking example of the necessity for the cooperation of the medical profession with the public. The people in general, no doubt, will continue to persist in creating or promoting disease, and then will put the problem to the physician to solve. It is unnecessary to say that the discovery of the specific cause of diabetes is today one of the most important research problems before the laboratory worker in medicine.

*Cancer* may well be mentioned, but the problem has been discussed so often that it is superfluous to do more than place it here along with the other diseases referred to. Attention is called to one point, namely, that it is becoming increasingly evident that the diet is important in relation to the progress of cancer. An excessive or a carbohydrate diet may have something to do with the present apparent increase in the incidence of this disease. This is a problem about which, no doubt, we shall hear very much more in the immediate future.

The *Cardio-Vascular-Renal* group affords innumerable clinical and laboratory problems as to causation, distribution, diet, etc. The interest and attention of Public Health officials and laboratory workers, no doubt, will be directed more and more to this large group of serious diseases.

An interesting phenomenon in connection



with laboratory work extending over a period of years is its variability. Only a few procedures in the laboratory become permanent. Methods are constantly changing, for two reasons. Improved methods are introduced constantly to replace older and obsolete ones. For example, the Wassermann test, which has occupied such a prominent place in the laboratory for some years, is now being rapidly replaced by other simpler methods. In the second place, the diseases in a community are changing from time to time. When one analyzes this point, one is struck with the rapidity of change in the incidence of diseases from decade to decade. In "The Rise and Fall of Diseases in Illinois," recently published by Rawlings from the State Department of Public Health of Illinois, it is interesting to note the diseases that occurred here fifty to seventy-five years ago. Cholera, yellow fever, milk sickness, snake bite, typhoid fever and malaria were common diseases and met with frequently by physicians. Now, these diseases have disappeared or are becoming relatively rare. At the present time, on the other hand, we are recognizing such interesting diseases as rabbit fever, undulant fever, septic sore throat and fungus diseases of various kinds. The kind of laboratory work made necessary by these diseases involves new procedures. The laboratory, therefore, must constantly adjust itself in relation to the prevailing diseases of the period.

Again if we look into the future, we may safely predict that some of our present diseases will disappear, or become relatively rare, as typhoid fever has done in the recent past. Infectious diseases in children, intestinal diseases, and tuberculosis are now reacting in this way. Furthermore, we may be sure that in the future, laboratory work, both research and routine, will be occupied very much more with the diseases referred to above, namely pneumonias, influenza, poliomyelitis, encephalitis, cardio-vascular-renal diseases, diabetes and cancer.

Another point worthy of comment may be mentioned here and that is that the tendency in laboratory procedures, as they become more and more refined, is away from biologic methods, to those of chemistry and physics. This tendency has been quite rapid of late, and no doubt will continue in the future.

It will be clear from what has been said

above that the research problems in connection with disease will become more and more rational and, therefore, more and more dependent upon pure sciences. Speaking broadly, it is the laboratories of the universities and institutes that deal primarily with such problems. Hence it behooves us to establish close relationships between such laboratories and our Departments of Public Health. There is nothing new about this. It has been done and is now being done all over the world.

A new feature in the development of laboratory work is the increase in the volume of specimens from normal individuals, to which attention has been called by Dr. Thomas Hull of our State Department of Health. This is occasioned by the interest manifested in the so-called periodic health-examinations. This is an important phase of preventive laboratory medicine, and should be encouraged in every possible way. No doubt, in the future, we may expect a continued increase in the amount of work of this kind.

Dr. Hull also calls attention to the great increase that has taken place recently in the number of laboratory examinations made for public institutions. By public institutions are meant primarily the institutions operating under the State Department of Public Welfare, namely, insane asylums, hospitals, special institutes, prisons, etc. This is gratifying in that it indicates that far more attention is being given to the health of individuals who are unfortunate enough to become wards of the state. No doubt, the number of laboratory examinations is a fair index of the standard of medical service that is rendered to these people.

As a concluding statement, may I refer to some matters of interest to Illinois from the historical point of view. The State Department of Public Health is rapidly taking its place with the most advanced Health Departments in this country. The creative and productive type of work should be emphasized more and more and, no doubt, this will be done. In the seventies of last century, Dr. Thomas J. Burrill came to Illinois and was made Professor of Botany at the State University. He exercised a powerful influence for years in the university, and at one time was Acting President. In 1877 he began to teach bacteriology as a definite part of the

botany schedule. This was the first systematic work given in bacteriology anywhere in the country. At one time he had charge of a laboratory to prepare vaccine virus under the direction of the State Board of Health. From first to last, Burrill emphasized the creative and investigative side of bacteriology and laboratory work, and through his contributions he became an outstanding leader in the field of bacteriology. His specialty was the bacteriology of plant diseases. He and Dr. Erwin F. Smith may be looked upon as occupying the same relative position to plant pathology that Pasteur and Koch do to animal pathology. They were years ahead of the rest of the world in their work in the bacteriology of infectious diseases in plants.

Too much emphasis can not be given to the historical aspects of the laboratory in relation to Public Health. In this connection we may mention the importance of an institution for the historical study and presentation of the field of Medicine. It is of especial importance from the point of view of laboratory work and the teaching of Public Health. In a state like Illinois and in a cosmopolitan center like Chicago there should be a great Public Health Museum designed to illustrate the history and development of Public Health in its broad aspects. This, if properly arranged, would cover practically the entire field of medicine, both theoretical and practical, as well as laboratory and field work. It should be on a scale comparable to the Art Institute or the Field Museum or the proposed Industrial Museum in Chicago. American Medicine, and, especially, the Medicine of the Central West, should be emphasized, and the diseases we meet here should be depicted in all their phases. Such an institution would serve many purposes. It would be invaluable for teaching both in graduate and undergraduate work and would bring together the various medical sciences and specialties as could be done in no other way. Especially would it reveal relations between routine work and the outstanding discoveries in laboratory development and practical field work. Our institutions have been provided with many small museums highly specialized so that they are of little general interest. We have neglected to reveal the larger relations in our sciences to ourselves and to the public.

In such a museum could be illustrated the history of disease in all its phases, together with

the efforts of man, successful and unsuccessful, to combat its ravages. Here also should be included all phases of veterinary medicine, as well as the subject of comparative medicine in its broadest aspects.

Our people now stress health as has not been done since the Grecian era, and we may well be proud of our accomplishments in this regard. It would seem altogether fitting that we should have a splendid medical and public health museum, quite on a par with other institutions and serving not only the medical profession in its practical and teaching work, but also the public where they may be free to go and learn all about their bodies and its afflictions. This should be a proper place for the education of parents and children in physiology, sex matters, personal hygiene, care of teeth, etc.

One of the most important lessons that we should appreciate is the great complexity and the vast scope of the field of Public Health. It is not a definite science but comprises a great body of knowledge about as broad as experimental science itself. For that reason the study of Public Health should be excellently adapted for general educational purposes. In this field, not only are the fundamentals of practically every laboratory science applied, but here is ample opportunity for the study of classics, the humanities, social problems and economics; for all civilizations have been profoundly influenced by problems of health and disease.

#### DISCUSSION

Dr. Walter G. Bain, Springfield: We are very glad to have had the opportunity of listening to Dr. Davis' very comprehensive and very instructive paper.

As a laboratory worker practically all my life, I find one situation which, I think, tends to lessen the value of our laboratory work more than anything else. This is that both public health workers and physicians many times fail to attach the right importance and proper interpretation to laboratory findings.

As illustration, from the standpoint of the public health worker, there is great importance attached to the bacteria count in milk. A high bacteria count is interpreted as conclusive evidence of a disease-producing germ in milk, while, as a matter of fact, it is only evidence of improper handling of milk and should be used only as an indicator of unsatisfactory conditions governing a source of milk supply.

From the standpoint of the physician, a patient's blood is examined for the Widal test and result is



negative. The physician may consider this one test sufficient to rule out the possibility of typhoid fever, whereas a later specimen of blood may give a positive Widal.

The same thing is true in malaria. If the specimen of blood is obtained after the physician has given quinine, the laboratory finding is, of course, negative, and if the physician dismisses from his mind the possibility of malaria, he is not giving a correct valuation to the laboratory work. I had an examination not long ago, where the patient had been in the hospital the previous season, with temperature. Malaria test was negative during the first hospitalization and when the patient returned with no previous quinine medication, we found malaria parasites very abundantly.

Professor Davis spoke of serum for meningitis not giving the results which were expected, as compared with those previously attained. My experience convinces me that unsatisfactory results with meningitis serum is entirely due to improper administration.

We have had many cases at St. John's Hospital, Springfield, and have always had prompt and satisfactory reaction except in cases which were complicated with infection outside the canal, or outside the ventricles, previous to the serum injection. We have had cases where very slight chance was entertained for recovery, cases highly delirious, show prompt improvement when we gave the serum in sufficient quantities.

Oftentimes insufficient diphtheria antitoxin is given at the beginning and the reaction is unsatisfactory for that reason.

In our work at the hospital, we have followed this procedure: We withdraw thirty-five (35) cc. of the spinal fluid and replace with thirty (30) cc. of serum, twice daily and continue until the spinal fluid clears.

We seldom fail to get results when we have given our serum in that way. I believe this failure on the part of the profession to get results in meningitis is due to the fact that too little serum is administered, rather than that the serum is not properly prepared.

In closing, I want to express along with Professor Davis my very great regard for the work of Professor Burrill. It was my privilege to be associated with Professor Burrill for two years at the University of Illinois, and the inspiration of Professor Burrill and his work has been a very potent factor to me in my work.

Dr. G. Koehler, Chicago: I want to say a few words of praise in favor of this most interesting, comprehensive and instructive essay presented by Dean Davis. The Section owes Dr. Davis an apology for not having a larger audience here to hear this most excellent paper. There is much food for thought in this essay.

I particularly agree with the proposition of starting a public health museum. More attention should be given to the historical phase of public health. The public health workers and the medical profession are neglecting to preserve the records, apparatus and instruments that the pioneers in their professions used.

Their preservation and subsequent exhibition would serve as object lessons to the public in the health education campaign which is bound to form an important part of the civilization of the future. In order that the public may reap the benefits of the great discoveries in the field of preventive medicine, it is necessary that they be familiar with the facts. A museum, such as Dr. Davis proposes, would be a potent factor in spreading such information. Educational work of that kind would do a great deal now and in the future in the education of the public.

Let us consider how much more beneficial it would be to present to the public the equipment used by Koch in formulating the fundamental rules of bacteriology, than it is to show them the armor worn by a medieval knight or the sword used by a general who conquered an army in Mexico.

The armamentaria of many of the pioneer workers in medicine are lost. In the future these things will be of great interest, and yet they are not being preserved.

The museum suggested would serve a two-fold purpose; first, to preserve those things which will be of great interest in the future, and, second, to serve as a great educational institution, for the purpose of bringing home to the people the outstanding discoveries in medicine, and the facts in regard to the origin and preservation of disease, the knowledge of which would result in their utilization for the preservation of health and the prolongation of life.

Dr. C. R. Smith, Decatur: This essay of Dr. Davis was given under the auspices of the Illinois Medical Laboratory Association, and as President of the Association I wish to extend our thanks to Dr. Davis for the paper.

Dr. Grace Wightman, Springfield: I should like to ask Dr. Davis what plans are worked out along the lines he suggested for a museum or educational exhibit for the Chicago World's Fair?

Dr. D. J. Davis, Chicago (closing): In reply to the questions asked I will say that what I have said concerning a museum is merely a suggestion made with the hope that in connection with the coming World's Fair in Chicago something in the way of a permanent medical museum might be established. If a permanent building could be erected, it would be a splendid thing for the development of medicine and public health in Illinois. I understand that committees are at work considering the larger aspects of the World's Fair, and if anything is to be done it should be done shortly. Activity along this line on the part of such organizations as the State Medical Society, State Department of Health, Chicago Medical Society, nursing organizations of the State, and many others might bring this about. A medical museum properly organized might serve the people in a medical way quite like the Art Institute serves them from the standpoint of art.

## SOME DIAGNOSTIC PROBLEMS IN TUBERCULOSIS\*

GEORGE THOMAS PALMER, M. D.  
SPRINGFIELD, ILL.

No subject has occupied a larger share of medical attention during the past quarter century than the diagnosis of tuberculosis and in no subject has agitation been more fruitful of results. Twenty-five years ago, tuberculosis stood first among the causes of death and the disease was rarely recognized until it had reached a more or less advanced stage. Today tuberculosis stands seventh among the causes of death and the diagnostic proficiency of physicians has greatly improved. In fact, we have now reached the encouraging place where critics declare that cases are being diagnosed as tuberculosis which are not tuberculous,—a gratifying reversal of conditions of a couple of decades ago.

While the diagnostic earmarks are more widely recognized and while early diagnosis is far more general than in the past, there is still ample reason to continue agitation for early diagnosis. Sanatoria are still crowded with advanced and terminal cases whose chances of recovery have been lost through delay in recognition of the nature of the disease.

In fact, the diagnostic refinements and short cuts which have developed during the past few years, valuable though they unquestionably are, appear to have led to the neglect or abandonment of procedures which were quite dependable in years gone by. Many physicians are led astray by blind dependence upon the x-ray;—not only by relying upon poor plates and unreliable interpretation by professional Roentgenologists; but by the actual limitations of x-ray in early chest diagnosis. The case history,—now as always the most important factor in diagnosis,—is frequently slighted or relegated to an inexperienced assistant. The established means of physical examination have suffered neglect in a day in which we have been somewhat blinded by the brilliant promises of the laboratory.

Singularly enough, in a day of laboratory enthusiasm, we have come to overlook the most important thing the laboratory has ever offered us in this particular disease. In many cases,

where elaborate examinations and tests have left us in confusion, a series of sputum tests—perhaps twenty to fifty, perhaps only one or two, has definitely cleared the atmosphere. It may stretch your credence when I say that, among the patients received at our sanatorium, in many of whom diagnosis was seriously delayed, about 40 per cent. have had no sputum tests.

In the main, however, diagnosis of the existence of tuberculosis is far better than in the past. There are still several simple, but all-important problems, however, which have not received sufficient consideration.

Having concluded by the more refined tests, by the existence of physical signs and x-ray shadows, that tuberculosis exists, there appears to be difficulty in determining what to do about it. There seems to be a great deal of confusion in differentiating between tuberculous infection, which is a very widespread condition rather than a disease; healed tuberculosis, which is no longer active, and clinical disease which requires definite and persistent treatment. Part of the confusion is due to the fact that extent of involvement and activity are two entirely different things. We fail to recognize that the patient with very early tuberculosis, as determined by x-ray shadows and physical signs, may be critically ill, while the patient with far advanced tuberculosis, as determined by the same criteria, may be able to engage safely in a gainful occupation. Evidence of failure to recognize activity, regardless of extent of disease, is found in the fact that many patients who are seriously ill, arrive at the sanatorium unattended, by inter-urban or bumping automobiles, while others who are only slightly ill, arrive by ambulance and expect to be fed by hand.

There are certain questions determining the illness of the tuberculous patient which laboratory procedure can never answer and which must be settled by the observation, the experience and judgment of the physician.

There is also reason to believe that continued failure may be due to lack of clear differentiation between tuberculosis and other conditions which may simulate tuberculosis, and particularly to a failure to recognize that tuberculosis may coexist with almost any other disease.

Early tuberculosis often presents a picture of low grade toxemia in which pulmonary signs are negligible or altogether absent. This picture is

\*Read before Section on Medicine, Illinois State Medical Society, Peoria, May 21, 1929.



practically identical with that of so-called neurasthenia, of focal infection and of thyroid disease. At times, the entire picture is found, by a process of elimination, to be due to tuberculosis alone. At other times tuberculosis may be satisfactorily excluded. Again, clinical tuberculosis may be found to coexist with some other form of infection. The reluctance of patients to accept a diagnosis of tuberculosis and the reluctance on the part of many physicians to make it, often leads to a diagnostic program in which tuberculosis is left to be the last, unavoidable conclusion.

As a result, many patients reach the sanatorium, after a series of surgical adventures, frequently with their chances of recovery seriously impaired by repeated shock and repeated general anesthesia. Teeth have been extracted, tonsils removed, gall bladder drained, appendectomies performed, pelvic organs mutilated and thyroids operated on and yet the toxemia persists, the slight temperature continues and we reluctantly conclude that an underlying tuberculosis is wholly or partly responsible for the picture. I do not mean to imply that tuberculosis is the cause of all or even a majority of such clinical pictures; but I do insist that tuberculosis is present in a sufficient number of cases to warrant extreme caution. It should be borne in mind, in case of doubt, that the routine rest cure of tuberculosis can do no harm in any case which simulates tuberculosis, and may do a great deal of good in preparing the patient for his surgery. The rest period will at least afford opportunity for clearing up the diagnosis. On the other hand, surgery and general anesthesia may seriously impair the chances of recovery from the underlying tuberculosis if it exists.

I have in mind a woman from northern Illinois, presenting a clinical picture of hyperthyroidism,—high basal metabolism, tremor, palpable thyroid, nervousness and rapid pulse. She was sent to the sanatorium for the purpose of eliminating tuberculosis, to assure safety in anesthesia, and, in the absence of tuberculosis, to prepare her for thyroidectomy. During her stay of a few months, tuberculosis was conclusively proven by sputum tests and clinical evidence. During the period of complete rest, the thyroid symptoms largely disappeared, the basal metabolism rate dropped to normal and operation was no longer considered. In this case

thyroidectomy certainly would not have cleared up the underlying tuberculosis; but would probably have increased and activated it. By keeping in mind the possibility of tuberculosis, which could not at that time be proven, and giving the patient the benefit of the conservative course, surgery was avoided and the patient was put in the way of recovery.

In the records of some two thousand cases in our sanatorium, one is struck by the frequency with which active tuberculosis follows surgery and general anesthesia,—the frequency with which health remains impaired after operations on tonsils, appendix, gall bladder, pelvic organs and thyroid,—operations all too frequently done in search of the source of focal infections; operations for the relief of a clinical picture which frequently characterizes early tuberculosis.

Certainly our records justify this word of caution: In case of symptoms of low grade toxemia, be sure to eliminate tuberculosis before giving a general anesthetic or resorting to surgery, and this whether you are able to demonstrate a definite focus of infection or not. Bear in mind that diseased tonsils and tuberculosis may coexist; that a chronic appendix and tuberculosis may coexist and that surgery of either tonsils or appendix, especially with general anesthesia, may relieve one condition; but may light up another far more serious.

Incidentally we are at times led astray by the acceptance of poorly founded medical axioms or rules of thumb. Not infrequently pulmonary tuberculosis is overlooked in the presence of organic heart disease in the belief that the two are not likely to coexist. And the same is true in regard to asthma in which the clinical picture is often due to tuberculosis with a large amount of fibrosis. Errors are also common in assuming that pulmonary tuberculosis necessarily begins in the apices. Advanced tuberculosis of the middle or lower lobe is at times concealed under a diagnosis of abscess.

Judging from considerable numbers of patients, from all classes of physicians, one is inclined to feel that, at the present time, the chief unsettled questions in dealing with the tuberculous are: 1. The determination of the exact illness of the patient as based upon both extent and activity of disease; 2. The decision of the

exact character of treatment and especially the amount of rest; 3. The appreciation of the relative unimportance of medical treatment as compared with definite training and regimen; 4. The decision as to when the process has become quiescent and the changes in discipline which may be justified by the stages of improvement; 5. A real conception of what is meant by rest.

It is obviously impracticable to discuss these subjects in detail at this time. It may be said, however, that, when a diagnosis of any degree of activity is made, treatment, in which complete rest is the chief factor, should be begun at once and carried to the limit. Many cases go to an advanced or terminal stage because the extreme gravity of even minimal evidences of activity are not appreciated and because discipline and treatment are carried out indifferently. What may be done for the patient with a temperature of 99.4 is more important than what may be done with the patient who has cavity and hemorrhage.

In the treatment of early tuberculosis, regimen is all-important; medical treatment relatively unimportant, and often harmful. Tuberculin, vaccines, nauseous drugs, iodine, calcium, inhalations, heliotherapy are at best merely adjuvants which must be used with caution. The indiscriminate use of light therapy—quartz lights, ultra-violet lights, natural sunlight—valuable though these may be in carefully selected cases, is now undoubtedly adding to unnecessary failure and wreckage.

Finally, attention should be directed to the fact that perhaps a majority of the failures which occur in curable cases, take place after all signs and symptoms of the disease have disappeared—in that very critical period of readjusting the patient to his normal life. At this time x-ray and other of the more refined means of diagnosis are useless; temperature and sputum tests may or may not be of value; repeated physical examinations may aid us if our records are exact and detailed. It is here that constant observation by the doctor;—the man and not his mechanical tool kit,—the employment of thought, intelligence, time and sound sense will often save the day.

Perhaps I am prejudiced when I say that, in no other field save nervous diseases, is the per-

sonal attention, the close observation, the psychology, the watchful and continued observation, the unwarped judgment of the doctor so imperatively needed as in tuberculosis.

## DISCUSSION

Dr. Emmet Keating, Chicago: Dr. Palmer's paper teaches one a great lesson, and that is that we must make careful and repeated careful physical examinations.

He has pointed out that many things may simulate tuberculosis, and tuberculosis may simulate many other things.

I just want to say a word about what he said about treatment. There is no doubt that rest and food and fresh air are the foundation of all successful treatment. But we must remember the psychology of the individual. We must remember that these patients must be kept interested, amused if you will; and that all of the lights and all of the various physiotherapeutic measures, as Dr. Palmer has said, may be instruments of great harm if not used by sensible men.

But if these things are used by sensible men in a sensible manner, they have a certain definite and specific value of their own, and they have a very great value in keeping the patient interested in doing what the doctor tells him to do.

Dr. Walter G. Bain, Springfield; I was a little disappointed that the doctor omitted a reference to chest conditions and gastro-intestinal disturbances.

I have been very much impressed with the frequency with which cases come into our institution as cases of gastro-intestinal trouble, when the primary condition was one of pulmonary tuberculosis. So often has this happened, that I am of the opinion that every case of gastro-intestinal symptoms which are not definitely of an acute type, should first be carefully examined for pulmonary tuberculosis.

I also believe that chronic conditions of the gastro-intestinal tract, such as chronic appendices and gall bladders, undoubtedly will lay a very fertile foundation for a later pulmonary tuberculosis and the relation of these, I think, is one which should be constantly kept in mind.

Dr. S. E. Munson, Springfield: I think this paper is very timely because we see so much in the literature at the present time of the decrease in mortality from tuberculosis.

I think the doctors are rather lulling themselves to the lack of importance of their former definite efforts to diagnose tuberculosis early.

In recent years the tuberculosis sanatoria throughout the country have been thinking very much about the care of the chronic cardiacs—that is, of chronic heart disease. I really believe that in a few years more the statistics will show that tuberculosis is not on the de-



crease as much as we feel. A group of us in Springfield take care of the dispensary work, and all the cases sent to St. John's Hospital Sanatorium are first passed upon by this group of men.

No doubt the visiting nurse and all of these factors have aided a great deal in lessening the mortality, but the prevalence of tuberculosis is yet, I think, very great. The mortality, of course, is not so great, and we only judge the prevalence of tuberculosis at the present time by the mortality statistics.

We see a great deal of group tuberculosis in the dispensary. Cases that come in where there is some member of the family that has tuberculosis, or there is a contact. It is here that so much work can be done by the physician in the prevention of tuberculosis.

A few months ago a family who had taken one member to Denver, Colorado, because he had tuberculosis, wandered around out there until this person died. They finally returned home with another one hopeless. Other members of the family came to the dispensary for diagnosis. The one who died was about eighteen, and there were three or four members of the family who were younger. The one in a hopeless condition was about sixteen. These cases then came under observation down to the smallest child. The condition of their tonsils was frightful.

As I have grown older in the practice of medicine I think more seriously about the tonsil situation in children than I did years ago, because all the time in most every case where there is tuberculosis in the family some of the younger members have serious tonsil conditions. When there is this condition of the tonsils we have an involvement of the glands of the neck, and it is only a short step until an involvement of the bronchial glands takes place which brings about active tuberculosis in the adolescent years.

Dr. George T. Palmer, Springfield: I am glad Dr. Keating called my attention to my apparent lack of emphasis on the treatment of the tuberculosis patient, merely passing it on with the idea that the drug administration was relatively unimportant, because I know of no class of patients who require more constant attention, more constant treatment, more ingenuity on the part of the physician in keeping the patient feeling that something is being done for him.

Yet I do think a word of caution is timely that the doctor should not fool himself about any particular drug that he is going to give having any material effect on pulmonary tuberculosis.

I am exceedingly glad of and indebted to Dr. Bain for the emphasis on the frequency with which pulmonary tuberculosis is found in the guise of the various chronic gastro-intestinal disorders.

I think Dr. Munson is pointing out a fact when he says that our great optimism about the disappearance of tuberculosis is premature. In a great many of the larger centers of population, at any rate, they are already reporting an increase in the pulmonary tuberculosis during the past two or three years.

## CANCER IN EYE, EAR, NOSE AND THROAT PRACTICE\*

G. W. BOOT, M. D.

EVANSTON, ILLINOIS

This paper is based on the last 250 case histories in the current files of the Cook County Hospital. These histories comprise all the records that could be found of cancer involving the regions of the eye, ear, nose, throat, larynx, trachea, bronchi, lungs, and thyroids. The most striking feature of these records is the overwhelming number of males as compared with females—over seven times as many men as women. There must be some reason for this great excess of men, and this study was undertaken to find out if possible what influences caused the difference in incidence in the two sexes. To this end the various facts which might have a bearing on the question were tabulated as far as possible. Many of the records are incomplete in various respects, but it is thought that enough information has been obtained to throw some light on the etiology of cancer as concerns the Eye, Ear, Nose and Throat specialist.

Taking up the various points in detail we find as to

Location:	Males	Females	Total Cases	% of Males	% of Females
Eyelids .....	4	2	6	67	33
Orbit .....	3	1	4	75	25
Auricle .....	6	1	7	86	14
Septum .....	1	0	1	100	0
Antrum .....	6	5	11	55	45
Sarcoma of antrum. 1	0	1	1	100	0
Ca. of other sinuses 0	1	1	1	0	100
Lips .....	27	1	28	96	4
Face .....	9	1	10	90	10
Mouth .....	9	0	9	100	0
Cheek .....	3	0	3	100	0
Mandible .....	4	0	4	100	0
Branchial Cleft .... 2	0	2	2	100	0
Neck .....	1	0	1	100	0
Thyroid gland ..... 1	4	5	20	80	
Tonsils .....	15	0	15	100	0
Tongue .....	30	1	31	97	3
Lung .....	13	4	17	76	24
Epiglottis .....	4	0	4	100	0
Larynx .....	16	0	16	100	0
Pharynx .....	1	0	1	100	0
Esophagus .....	66	8	74	89	11
Totals .....	221	29	250		
Negroes .....	11	2	13	85	15
Whites .....	210	27	237	89	11

Relative percentage of negro men to white men—5% to 95%.

\*Read before Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Peoria, May 22, 1929.

Relative percentage of negro women to white women—7% to 93%.

Arranged in the order of their frequency the organs involved were:

Esophagus .....	74
Tongue .....	31
Lips .....	28
Lung .....	17
Larynx .....	16
Tonsils .....	15
Antrum .....	11
Face .....	10
Mouth .....	9
Auricle .....	7
Eyelids .....	6
Thyroid gland .....	5
Orbit .....	4
Mandible .....	4
Epiglottis .....	4
Cheek .....	3
Branchial cleft .....	2
Septum .....	1
Sarcoma of antrum.....	1
Ca. of other sinuses.....	1
Neck .....	1
Pharynx .....	1

#### *Social State:*

Married	Single	Divorced	Widowed	Not given
96	46	7	47	54

There is nothing very apparent in the social state that indicates a cause for cancer.

#### *Ages:*

11 to 20.....	1 case
21 to 30.....	2 cases
31 to 40.....	14 cases
41 to 50.....	58 cases
51 to 60.....	78 cases
61 to 70.....	74 cases
71 to 80.....	15 cases
81 to 90.....	2 cases

In the decades of 41-70 there were 210 cases, or 84% of total. The youngest patient was 20, the oldest 82. Age is evidently an important factor in the occurrence of cancer.

#### *Use of Tobacco:*

10 denied using tobacco.
30 used tobacco in moderation.
8 used tobacco to excess.

13 smoked a pipe which probably meant almost constant smoking. In other words, 10 denied using tobacco and 51 admitted using it, a relative percentage of about 16½% to 83½%. Cancer was five times as common in smokers as in non-smokers.

*Alcohol:* 17 denied using alcohol, and 47 admitted using it. Cancer was about three times as common in the users of alcohol.

*Syphilis:* 121 denied syphilis and were not shown by the Wassermann test to have it. 22 either admitted having had syphilis or had a

positive Wassermann. Syphilis thus could not be shown to cause an increase in cancer incidence for with an occurrence of a positive Wasserman of about 16% as reported from two Chicago institutions that make Wassermans on all patients, about 23 of our patients should have had a positive Wassermann. The incidence of cancer is the same in both syphilitics and non-syphilitics.

#### *Condition of Teeth:*

85 had bad teeth. 31 had several or all the teeth extracted, making a total of 116 who had, or had had bad teeth. Only 3 were noted as having good teeth, and no radiograms were taken of these. Bad teeth are known to have been present in about 98% of the cases, where their condition was noted. Most of the mouths were veritable cesspools.

*Condition of Tonsils:* This was noted in but 18, 4 were large, and 14 showed infection. In view of the filthy condition of most of the mouths, it is likely that all the tonsils carried infection.

*Injuries:* 11 had had injuries which seemed to stand in casual relation. Among them were cuts, bites, burns, sunburns, and poorly fitting dental plates.

One patient gave a history of appendicitis, one of arthritis, one of having inhaled fumes of nitric acid and of swallowing phenol, and one cancer developed on the scar of a healed lupus.

*Heredity:* Heredity was admitted in 6 cases and denied in 67. Of those admitting heredity of a familial incidence

No. 16 with cancer of auricle had a brother with cancer of forehead.

No. 102 with cancer of throat had a sister with cancer of stomach.

No. 118 with cancer of lung had a sister with cancer of breast.

No. 156 with cancer of larynx had an aunt with cancer of stomach.

No. 193 with cancer of esophagus had a mother with cancer of stomach.

No. 205 with cancer of esophagus had a father with cancer, location not given.

No. 86 with cancer of neck had a wife with cancer of face.

No. 108 with cancer of tongue had a wife with cancer of stomach.

Since 92% of those where heredity is noted denied having cancer in the family, and only 8% admitted it, the case for heredity as a cause of cancer is not very strong. Of the six patients who admitted heredity, the aunt of No. 156 might or might not have been a blood relation.

For any anatomical structure to be hereditary



it is supposed that its antecedents were in some particular chromosome or its hypothetical gene. This being the case, a hereditary anatomical peculiarity should always appear in the same place in the same organ or structure. A son with a supernumerary finger on his right hand could hardly claim heredity if his father's supernumerary digit were on his left foot only.

If the sexes of parent and offspring were different, the hereditary peculiarity should at least be in analogous organs; thus if a father had cancer of the prostate, the daughter should have cancer in the uterus, or if the mother had cancer of the uterus, the son should have cancer in the region of the prostate.

If the mother had cancer of the breast, the son should have it in the same organ, and since disuse or non-use is considered by some to predispose to cancer, the son should be all the more likely to have cancer of the breast if his mother had it in the same organ. Has anyone ever noted cancer of the breast in the son of a woman who had cancer of the breast? If it has occurred, I have failed to note such an occurrence either in my reading or in my practice.

It is possible that No. 16, who had cancer of the auricle, while his brother had cancer of the forehead, had the lesion sufficiently near the locality to be considered the result of heredity. The same may be said of No. 193, who had cancer of the esophagus and whose mother had cancer of the stomach. But No. 103 with cancer of the tonsil while his sister had cancer of the stomach, could hardly have inherited it in the same chromosomes, much less the same genes. The same holds true for No. 118, who had cancer of the lung while his sister had cancer of the breast, and for No. 156, who had cancer of the larynx while his aunt had cancer of the breast.

Cases 86 and 108 are illustrations of both husband and wife having cancer. If the disease were communicable these might be considered illustrations of contagion, or they might both have been exposed to the same causative agents.

*Occupations:* In the order of their frequency the occupations were:

Laborers .....	88
Housekeepers .....	12
Salesmen .....	4
Janitors .....	4
Watchmen .....	3

Engineers .....	3
Carpenters .....	3
Tailors .....	3
Porters .....	3
Teamsters .....	2
Cooks .....	2
Photographers .....	2
Painters .....	2
Machinists .....	2
Firemen .....	2
Moulder .....	1
Actor .....	1
Steamfitter .....	1
Buyer .....	1
Welder .....	1
Farmer .....	1
Chef .....	1
Switchman .....	1
Probation officer .....	1
Decorator .....	1
Lumberman .....	1
Chauffeur .....	1
Truck driver .....	1
Presser .....	1
Bricklayer .....	1
Electrician .....	1
Packer .....	1
Shoeshiner .....	1
Upholsterer .....	1
Real estate .....	1
Plasterer .....	1
Peddler .....	1
Leather cutter .....	1
Butcher .....	1
Candy maker .....	1
Horse-shoer .....	1

The most common occupation, as you see, was laborer, which is to be expected in a county hospital. The women of cancerous age were all housekeepers, as was also to be expected. There seems to have been nothing in occupation that predisposed them to cancer.

*Type of Growth:* The various cancers were reported from the laboratory as basal cell, squamous cell, epidermoid, epithelioma, rodent, simplex, bronchogenic, etc.—most of the qualifying terms applied to cancer having little importance.

*Discussion:* Occupation, heredity, alcohol, syphilis, and the social state seem to have little or nothing to do with the genesis of cancer. Injury seems to have had some effect in locating the tumor inasmuch as the tumor developed at the site of the injury and so soon afterward as to indicate a connection between the tumor and the injury.

Tobacco and a filthy mouth seem to have been the chief agents in starting the tumor and in deciding where it should be located.

I am convinced that cancer is the result of a slow biochemical action on the developing epithelial cells, that it may be caused by more than one thing, and that time is an essential part of it; a slow absorption of some chemical substance

into the blood and other fluids of the body that bathe the developing epithelial cells, or a slow physical action by sunlight, radium, or x-rays. It is more than possible that a slow absorption of mild toxins from the organisms developing in carious teeth, in root abscesses, and in pyorrhea, as well as developing in chronically infected tonsils, particularly in the patients who have carious teeth, pyorrhea, and infection of the tonsils, play a large part in the slow biochemical changes that start cancer. In fact, the whole process has a close resemblance to inflammation except that the process is not severe enough to cause chemotaxis, necrosis of cells, and the reaction that comes with inflammation. It seems to be more like the slow reaction going on in the formation of a gumma though even that is a more active process than the process that results in the development of cancer. The absorption of these mild toxins must go on for quite a number of years before they have sensitized the germinal epithelial cells to the point where a little added stimulation in the form of irritation inaugurates the cancerous proliferation that does not cease until the cancer is removed or the patient's death results.

This general stimulation of epithelial cells throughout the body explains why recurrences occur so often after apparently perfect removal of a cancer, and after several years. The sensitization is general and the cancer is only a local manifestation of a constitutional condition which needs but a little added stimulation almost anywhere in the body to cause a recurrence of the cancer there. This has been borne out by experiments on mice during the production of tar cancers. After the mouse had been painted with tar, and before cancer has appeared, scratches at a distance from the place of application of the tar have caused the cancer to appear at the site of the scratch before it appeared elsewhere.

In short, the production of cancer is very much like the process Loeb developed in his experimental production of artificial fertilization of sea urchin eggs. He changed the composition slightly of the sea water in which the unfertilized eggs lay, and they began to multiply, or he scratched their limiting membrane slightly and this slight trauma started them to multiplying. It does not seem irrational to suppose that a slight change in the composition of the fluids surrounding the germinal epithelial cells, com-

bined with a slight trauma, might act in the same manner.

## DISCUSSION

Dr. A. H. Andrews, Chicago: In cases of cancer of the ear, of which I have seen a few, it has been hard to trace or impossible to find any heredity, any family tendency or any predisposing cause that I was able to discover. I think that the question of local irritation has much more to do with the production of cancer than anything else we know of. Most of the patients I have had with cancer of the middle ear, have had long standing suppurative otitis media, and in cancer of the throat I think all of them had been tobacco users, with tonsils that had given evidence of disease long before the cancer appeared. Among patients with chronic suppurative otitis media, probably not one in ten thousand develops cancer; of smokers probably a far smaller percentage, so I cannot make much of that phase of the etiology.

Dr. Oscar C. Breitenbach, Waukegan: There are few clinicians, who have given more attention to a problem so important as that of cancer than has Dr. Boot in the field of otolaryngology. I want to compliment him on his enthusiasm.

Reasoning by analogy is dangerous. Those of you who have read the first Joseph Price lecture by Professor Warthin of the University of Michigan covering 1500 autopsies on subjects showing physiological evidences of latent or active syphilis, could not help but be impressed with the very selective tendency of lues. It does not follow that analogous parts in the male and female should show the same frequency of attack. In lues immunity in the female is shown particularly in the cardio-vascular system, central nervous system, and the ovary, but pathology is much more extensive in the liver, pancreas, adrenals, and lower bowel than in men. I am inclined to believe that we have a definite serological background in cancer as we have in syphilis.

Tissue repair is dependent upon the stimulation and inhibition, and in the normal individual cell reproduction ceases when anatomical defects have been restored. Chronic irritation in the cancer patient seems to lack the final stimulus of inhibition, and I concur in Dr. Boot's final conclusion that bio-chemistry in precipitating a faulty biological reaction may after all be a very important factor in this great problem.

Dr. Noah Schoolman, Chicago: In this connection I have come across what seems to me to be a very plausible theory propounded by Dr. Benjamin Gruskin, pathologist, Mount Sinai Hospital, Chicago. His conception is that connective tissue cells normally have the property of generating certain lysins which are antagonistic to the excessive growth of epithelial cells, so that although an inciting factor such as chronic irritation may be present carcinoma does not develop. If on the other hand the connective tissue fails to produce such lytic agent a carcinoma results when the proper extrinsic factors are present. The opposite cycle follows in the production of sarcoma. The tendency toward deficiency or lack of the lytic agent which is



responsible for the maintenance of tissue equilibrium is hereditary and relative. And the lower the threshold of safety, the surer and easier will it be wiped out, particularly as age advances, by a chronic irritation. This theory is rather fascinating and seems to allot a proper valuation to the important and yet not quite understood role that heredity, age, and chronic irritation play in the production of malignant disease. Experiments with animal inoculations for the production of immunizing sera and their employment for the detection and treatment of cancer is described by this author in the *American Journal of the Medical Sciences*, April, 1929, No. 4, Vol. CLXXVII, p. 476.

Dr. George W. Boot, Chicago: (closing) In answer to Dr. Carmody, local irritation is not enough to cause cancer, or we would all have it from shaving. You say that not one in 10,000 smokers develops cancer; you say that most of these people have bad teeth; I grant it. The point is this; there is a cancer age, and there is something that sensitizes the cells. It is not one thing, it is several. Laborers are injured more about the face, but I doubt if they are injured more in other parts than women. Undoubtedly syphilis has something to do with it. As to Dr. Schoolman's theory that there is a barrier between connective tissue and epithelium, we will all grant that but something else acts on these epithelial cells.

#### MODIFICATION OF THE PRESENT RADICAL OPERATION FOR DEFLECTION OF THE NASAL SEPTUM\*

C. F. BURKHARDT, M. D.

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It is the opinion of the writer, based upon clinical observations of more than twenty years, that the nose and its accessory sinuses, etc., have been and continue to be, perhaps, the objective of more vicious surgical attacks, than any other part of the human anatomy; hence we find the post-operative status of this class of cases is, in far too many cases, a worse condition than the pre-operative status.

The reasons for these unsatisfactory results following nose and sinus operations are obvious: First, that this is a field of operation that is most difficult. Second, that too many dare to invade this special domain of surgery with insufficient knowledge and skill of technic, regardless of its difficulties. This special surgery should be undertaken only by the well-trained specialist, and not by the novitiate; and emphasis should be placed upon the importance of the novitiate first acquiring the proper skill and technic upon the cadaver before operating upon

the living subject, which in many instances comes close to the border-line of criminality. As proof of the above statement, some years ago the writer was called as consultant in a case of traumatic meningitis, with fatal results. This was a direct result of a trauma to the cribiform plate, which occurred in what should have been a simple turbinectomy. Third, that in at least a small percentage of cases, even the expert operator fails to attain to the full measure of results desired.

There are cases of deflection of the septum in which it is preferable not to interfere surgically with the septum. There can be considerable deviation or deflection of the septum, and yet there may be no serious interruption of breathing or drainage. There are other cases where the convexity of the septum presses against hypertrophied turbinates, which blocks free breathing and drainage. This class of cases can be corrected by performing a simple turbinectomy.

A submucous operation on the septum alone will not correct pathological conditions of the nose and accessory sinuses which are caused by intrusions of the turbinates on the septum. We should bear in mind that a deflection of the septum (excepting cases caused by traumatism) has its origin in childhood.

M. Lubman in *New York Medical Journal*, Nov. 22, 1919, states that in his opinion far too many septums are sacrificed because they are not straight. A deflected septum per se does not require any operative intervention so long as the patient does not complain or show symptoms of obstructed breathing and drainage.

Pautow enumerates the various disadvantages of the Killian operation, which have led to an attempt to devise newer and less radical operations. "In the first place the septum, after the Killian operation, although straight, may be movable, being drawn against the side of the nose on inspiration. Second, the operation may also cause a falling in of the bridge of the nose. A third complication to be dreaded is perforation of the septum. Fourth, in atrophic rhinitis, or any latent tendency toward it, the Killian operation is contraindicated."

One of the attempts at greater conservatism has been the reimplantation of cartilage between the mucosal layers, with the hope that it might live. Animal experiments, however, have shown

\*Read before the Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Peoria, May 22, 1929.

that such cartilage grafts do not live, but are absorbed.

The writer believes that the modern operative methods have a tendency toward too much radicalism; especially is this true as regards the nasal septum operations, like the Killian-Freer operation, and other operative procedures of like character, which have for their aim the removal of the major portion of the bony structure of the nasal septum. There is a very small percentage of deviated septums which can be corrected only by radical operation. In conditions of this character, the radical operation gives the best results obtainable; but in the vast majority of cases of deviation, the correction can be made by less radical methods, which have the advantage of conserving at least a bony skeleton or frame to support the septum; and therefore, except in the small percentage of cases above referred to, in which the Killian-Freer operation will render the best results to be secured by any method, the less experienced operator, especially, will secure better results by following the line of conservatism, as represented by the operative procedure or technic of Asch, Watson, Gleason, Roberts, Sluder, Kyle, etc., or combinations or modifications of them.

The writer has made use of the following operation for the past twenty years with good results. No claim is made that it is adaptable to all septum deviations, but that it is adaptable and gives good practical results in all classes of cases where there is a simple convexity of septum without large spurs or excrescences.

Technic: First thoroughly cleanse the nose by freely spraying with normal saline solution, then apply with pledgets of cotton a one-three thousandths solution of bichlorid of mercury to the entire mucosa of the nose.

Second. Complete anesthesia is produced by three grains of cocaine hydrochloride crystals placed in a small glass, and a cotton-tipped applicator wet with adrenaline solution is dipped into the crystals and applied to every part of the nasal mucosa. It is a good plan to follow the instructions of McKelvie, that is, to be particular to make the application to mucosa overlying the sphenopalatine ganglion, an area located just behind and above the posterior end of the middle turbinal.

Third. Roe's nasal septum forceps are applied to the deflected septum so that the male

jaw of the forceps is directly over the crest or summit of the convexity, and the female jaw rests in the concavity on the opposite side of septum. Before applying the forceps to septum, a thin rubber sheet or pad is placed upon the septum, and care should be taken to see that it remains in place on each side between the jaws of forceps and mucosa. Sufficient pressure is used to fracture the septum and place the part over sufficiently well to give the desired space, and if necessary the forceps can be reset in order that sufficient area can be fractured and reflected to the concaved side.

Fourth. The nostril which was blocked is packed with Simpson's intra-nasal tampons, rolled in two per cent. yellow oxide of mercury ointment. This is left forty-eight hours. At each dressing the nose should be sprayed clean with some alkaline solution, and just enough packing used to keep the septum from deflecting. As a rule three full packings with Simpson's tampons will be all that is needed, as the fractured sections of bone and cartilage cement together rapidly.

If performed properly, there should be no tearing or breaking through of the mucosa, and no more surgical reaction from trauma than in a submucous operation. One advantage to be claimed for the operation is that it can be accomplished in a very brief time, as compared with the long tedious submucous operations.

The jaws or blades of forceps should be blunt and not sharp, as the area of convexity is not to be cut out, as with a sharp punch, but is to be only fractured and reflected to the concaved side, without cutting through the mucosal layers.

Infection following operation is less liable to occur than in a submucous operation, for the reason that if properly done there is no opening for an invasion.

## DISCUSSION

Dr. C. Hopkins Long, Chicago: We all differ in our ideas concerning submucous operations, and we all have our trouble with deformities. I feel that every man has to deviate from the regular Killian operation according to the case. One thing we have difficulty with is closure of the wound. Very frequently forty-eight hours or so after the operation the patient returns with considerable pain in the field of operation. This usually means an infected wound. Opening the wound and inserting a small drain will relieve the condition. Perhaps had I always been as careful as Dr. Burkhardt I would not have had this annoyance. I



have not been in the habit of using antiseptics in the roof of the nose, as I have always considered that it was a sterile field. An operation on a nasal septum is said to have cured a patient's deafness. In my opinion there is only one kind of deafness that can be improved, and that is tubal deafness, an obstruction of the tubes. A sequence that frequently occurs after operations on the nasal septums is a tonsillitis which may appear as late as ten days after operation. It gives the operator a great deal of trouble, as he is usually inclined to think that the operation has had something to do with the trouble. However, an inquiry into the past history of the patient usually shows that he is subject to tonsillitis, and this is merely an exacerbation.

Dr. Oscar C. Breitenbach, Waukegan: The question of secondary pathology is most important. The essayist made mention of hypertrophied turbinates sometimes impinging on a deviated septum and doing a turbinectomy instead of a submucous operation in selected cases to establish free breathing. I am firmly convinced that a great deal of nasal pathology is definitely traceable to a deviated septum and the resulting disturbed nasal function. The nose definitely is an organ and has a definite function aside from smell—e. g. filtering, moistening, and by virtue of the dynamics involved in the air going through the nasal passages, aerating head cavities. A turbinate shows hypertrophy as a result of contiguous pathology, or is directly the result of deflected air currents as a result of the nasal septum being deviated. The deviated nasal septum is not only responsible for turbinate hypertrophy, but is the most important factor in a great deal of hyperemia inviting infection in the sinuses. I would be hesitant, therefore, in the face of a definite septal deviation to remove so important a physiological structure as a turbinate.

It is to be regretted that text-books on physiology fail to emphasize the importance of nasal function. Much is still hypothetical, but our knowledge through splendid research both in this country and abroad is definitely shaping itself.

Dr. C. H. Burkhardt, Effingham: (closing) It seems that according to the discussion here, that we are somewhat at sea in regard to the definite function of the nose. Evidently, the principal function of the nose is to take care of air, in other words, it is the organ of ingress and exit of air, which is warmed and strained before it enters the lungs. I think the principal thing to look after in regard to the nose is to see that we have free breathing and free drainage. If there is blocking of the drainage we will have trouble in the accessory sinuses. We know in all surgery the cardinal principle is to have proper drainage as early as possible, and that holds true in the nose. I do not include all cases, of course, but those noses in which you have a badly deflected septum, if you can get proper relief by removing a portion of the turbinate you get the desired result and probably a great deal better one, than by trying to operate on a septum that you may find is inoperable. There are septums in which a submucous operation is the operation of choice, but my experience

has been in the majority of cases that the simple method of operation outlined in the paper is better than a long tedious submucous with the possibility of a poor after result. The operation I suggested is not adaptable to all cases, but with the majority of cases you will get beautiful results and your patient will be much better satisfied than by the submucous method.

## KETOGENIC DIET IN EPILEPSY\*

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Epilepsy constitutes an important public health problem. Conservative estimates by those in a position to investigate the incidence of epilepsy among drafted soldiers during the war indicate that five hundred thousand persons, or one in every two hundred and fifty persons in the United States, are afflicted with this disease. Despite the vast amount of work that has been done in this field and despite the abundance of reports on various abnormal functions of the body of an epileptic, it has as yet not been possible to demonstrate any definite cause for the occurrence of convulsions. Numerous arguments have been proposed to ascribe a chemical or metabolic basis for the convulsions, and this is at the present time the outstanding thing. A few of them are given in references 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10. That many authors attribute epilepsy to a disturbance of the endocrine is evidenced by a few publications given in references 11, 12, 13 and 14. Others are in favor of the theory of a purely uncomplicated cerebral and nervous involvement. References 15, 16 and 17.

Since we have not been able even to ascertain the role which endogenous or exogenous factors play in the causation of that disease, there is a certain justification in following up mere conjectures to prove their merits or demerits. The fact that fasting causes a cessation of convulsions was brought out by the conjecture of an osteopath in Michigan in 1921. A few physicians substantiated his findings and proceeded to study the changes in the body produced during starvation. During fasting a definite reduction in the alkali reserve of the blood is produced there is a decrease in blood sugar, an increase in the hydrogen ion concentration of the blood.

\*Read before the Section on Medicine, Illinois State Medical Society, Peoria, May 21, 1929.

In the urine an increase in uric acid as well as an increased total titrable acidity and an increase in the excretion of ammonia. Since fasting can be only a temporary treatment and since it was found that after a starvation period convulsions again appeared, Wilder, Petermann, Talbot and others worked out a diet calculated to produce changes in the body similar to starvation. This was the beginning of the ketogenic diet.

In administering the ketogenic diet the patient is given a normal amount of protein, according to his body weight, a much reduced quantity of carbohydrates and an excess of fats. The human organism is unable to oxidize fatty acids completely to carbon dioxide and water unless there is an accompanying oxidation of glucose. If the amount of carbohydrates is reduced, intermediary products of fat digestion are formed belonging to the acetone group which have a highly acid reaction. It is thought that this production of acid during digestion is the essential thing in obtaining results. Wilder, however, ascribes the action to the anesthetic effect of the acetone bodies upon the nervous system (reference 20). Others explain the action of the ketogenic diet upon the basis of a dehydration process produced by the laxative and diuretic effect of the diet. The patients generally lose a few pounds in weight during the first two weeks of diet on account of loss of water. It must not be overlooked, however, that one reason for the effect of the ketogenic diet upon the convulsions may be a detoxifying process during the digestion. The appearance of the patient while under the treatment suggests the latter. Much has been said in favor of the ketogenic diet as well as against it. It cannot be denied that in this method of treatment we have for the first time found a way to influence epileptic convulsions without the use of depressive drugs.

Our work was carried on with eighty female epileptic adults all located in one cottage at the Chicago State Hospital. Of these eighty patients, 10 were young adults with pure idiopathic epilepsy and only little mental deterioration; 18 were old women, who had been inmates of the institution for many years and were not very suitable for any kind of treatment any more. The remaining 52 were cases of idiopathic epilepsy and cases of organic brain disease with

epilepsy. We started treatment on all of them to avoid any impression of favoritism.

A physical examination and a complete urine analysis were done on all patients. Many of the urine specimens revealed abnormal findings. The most common was a persistent very low specific gravity ranging from 1001 to 1003. Thirty specimens showed traces of albumin and casts. Most of the specimens had indican. The total acidity was variable.

After the preliminary physical examination of the patients the high fat diet was gradually introduced. All patients were kept under close observation and the effect of the diet upon them was noted. We soon decided to take off the diet, those patients with kidney lesions, those who were markedly underweight or who were in a poor physical condition generally. Four patients had developed pneumonia within a month after the introduction of the diet and although we reasoned that this may have developed without the diet we considered them poor physical risks and did not take them on again. Several patients with renal involvement showed an increase in albumin and casts and were also excluded from the diet. Gradually we also took off patients with a sufficient degree of mental deterioration to make cooperation impossible and a few of those who did not wish to cooperate. In this way the number of patients suitable for the diet had been gradually reduced to about thirty.

For each individual patient the diet was adjusted twice a week according to a gain or loss in weight. The urines were tested daily for acetone and diacetic acid. The patients' weights were taken twice a week.

The reaction to the diet differed greatly in our patients. One group did not develop ketosis in spite of a highly restricted diet, but some of these nevertheless showed very definite improvement in their condition. One young woman especially, who had been subject to several seizures daily was entirely free from them for three or four weeks at a time, although the urine showed only traces of acetone and no diacetic acid and the total acidity was very low. Another group of patients surrendered to a state of ketosis within only a moderately restricted diet; practically all of those were improved. A third group needed a well restricted diet but could be kept steadily in acidosis. The degree of improvement of this group corresponded di-



rectly with the amount of acetone and diacetic acid in the urine. The total acidity of the urine, however, was of no importance in any of these cases. A fourth group showed no improvement although they were in ketosis for over two months. About nine patients under treatment belonged to this group.

Since our results were so variable we thought that the tests for diacetic acid and acetone in the urine might not be sufficiently sensitive to estimate the effect on the diet. The carbon dioxide tension of alveolar air was introduced. These tests were performed several days on every patient who according to the urinary findings were in acidosis, but only one of them had a normal percentage of carbon dioxide tension. All the rest of them had a marked shift to the alkaline side. The readings varied a good deal in the same patient during the day but never reached the normal.

*Results*—One patient, a woman forty-five years of age who has had convulsions daily since infancy but showed very little mental deterioration, was easily influenced by the diet. She was in a much better physical condition as evidenced by a clearer complexion, a clean tongue, bright eyes and a more elastic walk. Her interest in her environment was much greater. While in ketosis she had convulsions only about once a month.

A second patient who was subject to major as well as minor attacks of epilepsy every day had only one or two convulsions a month while under the diet. The peculiar thing in her case was the prompt reaction to the diet. Even though no ketosis was produced as far as the urinary findings were concerned. The total acidity of her urine was only slightly acid at all times.

A third patient of special interest was a young woman about twenty-seven years of age who had from two to twenty-seven attacks a day but very little mental deterioration. As soon as she was in a moderate ketosis her convulsions decreased in number and severity and she was entirely free from attacks for seven to ten days at a time. Unfortunately she broke the diet now and then, which always resulted in a large number of convulsions.

Practically all of the other patients with the exception of a few were physically improved and the number and severity of the attacks decreased. One patient I like to mention was a young

woman twenty-five years of age with a very good education who had filled quite a responsible position a few years ago. Her disease started with psychic phenomena largely of a sexual nature and typical epileptic convulsions developed gradually out of this condition. This is the only patient who was kept in a definite acidosis with regard to urinary findings and also with regard to the carbon dioxide tension test, but yet there was no change in the number or severity of her convulsions.

In concluding this report I wish to state that in the ketogenic diet as it is used at present we do not have a cure for all cases of epilepsy (many are benefited by it), but we have a method to influence the convulsions without depressing drugs—and in it we have at least found a basis for a new direction in research in that disease.

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#### DISCUSSION

Dr. S. M. Goldberger, Chicago: I agree with everything Dr. Saunders has said about the ketogenic diet, and I am glad one man is here to substantiate whatever I say, and that is Dr. Wiley.

Dr. Wiley referred a case of epilepsy to me some time ago. This was a child about ten or eleven years of age. The child had twenty to thirty convulsions every morning. The only history obtainable was that the grandmother on one side had had epilepsy at the age of forty-five. Otherwise the family history was negative.

We started the case by putting it on the starvation diet for five or six days and then gradually increased the ketogenic diet. Within a period of two weeks our seizures amounted to one or two a day and by the end of the sixth week we had no seizures at all in this patient.

But a peculiar thing happened: just about the time we were to discharge the patient, he developed a pain in the McBurney's point, and I made the diagnosis of appendicitis.

I called up Dr. Wiley and told him I thought his patient had appendicitis. The patient was all the time under a high degree of acidosis. The boy was operated on and a pus appendix was removed. He made an uneventful recovery in ten days, was taken home, and everything went along fine until one day the mother called up and said the boy had had a number of convulsions.

I said, "What has he eaten?"

She said, "He told me he ran away and got a couple of boxes of chocolate cigars, which he had eaten."

He had increased the carbohydrate intake and the convulsions started. I told her to go back to the diet he was first put on, and in two or three days the convulsions ceased. This was about a year and a half

ago. Up to the present time the boy has two or three convulsions a month.

This is the only case that I know of in the literature where a person or a child has been operated on during the extreme degree of acidosis. So it shows you that in this type of case, acidosis is not a hindrance to an operation.

At the University of Illinois where I have been doing this work, we have found that environment often makes quite a difference; that placing any of these patients in a different environment causes the convulsions to cease, and just as soon as they become acclimated to the environment the convulsions begin. Therefore, in private cases it is rather a costly procedure, especially if it has to be hospitalized and the hospital treatment is the only treatment that can be carried on in this line of work.

Another thing that I wish to place emphasis on is that this treatment can only be used in the idiopathic form of epilepsy. No form of epilepsy that is of organic origin will be helped by the treatment, and it is well to bear this in mind because we save a lot of expense and hard work if we do so.

So often we get a case that we think is amenable to the treatment and we find out that instead of it being an idiopathic case, is a case of encephalitis. Here we get no results at all, and also the longer duration of the idiopathic type of case the less the chance of recovery, due to the mental deterioration.

I am very glad to hear Dr. Saunders' paper because it is not more than four-five years ago that the branch of the Chicago Medical Society to which I belong met at the Chicago State Hospital, and at that time I asked those who were taking care of the epilepsy patients whether they had ever used the ketogenic diet. I am glad that the doctor has told us what good has been done since using this line of treatment in cases of epilepsy.

Dr. Charles R. Wiley, Chicago: I can bear out and substantiate the things said by Dr. Goldberger on the case which I referred to him. This case, so far as I know, is practically entirely well. That is, they consider him well when he is having only one or two attacks a month. But I will bear this out, it was a very long, tedious and expensive procedure. It can only be carried out by people well equipped with money.

I wonder if these men have tried this ketogenic diet in the migraine which seems to be so closely associated to idiopathic epilepsy.

Since Dr. Goldberger treated this case of mine I have used it in a number of cases in migraine, and it seems to me they have shown some improvement. You all know, in migraine you haven't much to offer people. I have put these people on a diet producing acetone, which is a fairly simple procedure, and they have been able to go along without these periodic headaches for some time. I think that every case of epilepsy ought to be inspected frequently for possibilities of the ketogenic treatment. These men and women who are developing this method undoubtedly will do a great deal of good for cases of epilepsy.

Dr. R. O. Stites. Industry: I am so ignorant

would you please, explain just a little, what the ketogenic diet is? I came in late.

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#### THE SO-CALLED TRAUMATIC NEUROSIS\*

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In 1867 John Erichsen, English surgeon, published his famous monograph *Railway and Other Injuries of the Nervous System*. In those days it was customary to use a motto under the title and for this work Erichsen curiously enough chose the words of Montaigne: "I relate; I do not pass judgment," after which pronouncement he proceeded to describe various symptoms arising after railway accidents, and to pass judgment upon all manner of symptom complexes ranging from those of complete division of the spinal cord to those portraying what are now known as traumatic or reimbursement neuroses. Quite ignoring the intent of his motto

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he assures the reader that the basic pathology is doubtless that of a chronic meningo-myelitis, apparently basing his very general conclusions upon a single autopsy.

Thus arose the famous conception of the *railway spine*—the first formulation of the traumatic neurosis. In Erichsen's day neurological diagnosis was not so dependent upon objective findings as nowadays. Hysteria was known, but not its mechanism; and Babinski had not yet discovered the famous reflex of the big toe. The Wassermann test, spinal puncture and the x-ray were still in the distant future. Erichsen recovered large damages for his clients and started a controversy which lasted until the present day.

Oppenheim in his text-book of neurology, published in 1911, paid tribute to the persisting influence of the English surgeon in a statement that "accidents in which a physical trauma is associated with a mental shock, as in railway accidents, are especially liable to produce this neurosis—indeed have been the main source of our knowledge of traumatic neuroses." Oppenheim was inclined to relate the symptoms to "molecular changes, the result of concussion, in areas of the central nervous system which control the higher mental functions and the motor and sensory activities related to them." However, he conscientiously referred to a number of authorities, notably Strümpell, who differed from his views, even at that time holding that the desire for reimbursement was the most important if not the chief cause of neurosis.

A few years after this came the World War with its tremendous production of the neuroses labeled *shell-shock*, now so familiar to all. During the war the neuro-psychiatrist became thoroughly acquainted with the relationship of certain bodily symptoms to the individuals' intense desire to escape from an intolerable situation; when the war was over he saw thousands quickly recover, and since then has observed the persistence of neurotic reactions in many ex-service men who prefer government compensation to the vicissitudes of competitive existence.

Since the war nervous disturbances following industrial accidents and unaccompanied by objective findings have come to be looked upon with increasing frequency as functional, the effect upon the body mechanism of the individuals' wish to be sick. Especially does this seem

to be the view of German writers who eye askance their system of indeterminate pensions under which 92% of the neuroses remain permanent as compared with the speedy settlement plan of Denmark, where only a trifle over 6% persist after the award (O. J. Fay).<sup>1</sup> Oppenheim's 1923 text, revised by an editorial board of his old associates, pays little attention to his old viewpoint as contrasted with that of Strümpell's more recent followers. Stier<sup>2</sup> states quite simply that everything beyond the reaction to the accident, such as is observed in the uninsured, is either unrelated to the accident or is a reaction to the expectation of compensation or damages. The amount of conscious simulation he feels is not important—curiously agreeing in this with the English officer who told a friend of the writer that in their war hospitals they made no especial effort to discover malingering, though very possibly they treated some patients less gently than others because their symptoms seemed to be more consciously assumed.

M. Reichardt,<sup>3</sup> who has written extensively upon the subject, insists that "Mental reactions are not illnesses which accompany disease processes" and "—in my opinion it is false to call a traumatic neurotic sick, and a traumatic neurosis a disease—the accident neurosis is neither a neurosis in the sense of a disease, nor is it the consequence of an accident, but the psychological outcome of the traumatic experience or the brooding over it." Reichardt goes on to recite well known facts supporting his contention, namely: that children, students, sportsmen and housewives do not acquire neuroses under similar conditions to those precipitating these reactions in compensation seekers; that severely wounded soldiers were exempt, also prisoners; that lightning stroke with its terrific shock does not induce neurosis, that those badly injured by accident do not develop it, nor traumatic epileptics; that a neurosis often develops as the actual injuries heal; and finally, that payment of the claim cures the patient.

Kleist<sup>4</sup> believes that "There are no traumatic neuroses, but only compensation neuroses," calling attention to the fact that (in Germany) private insurance companies pay only in cases of mental and nervous disturbance dependent upon organic disease of the nervous system. Government insurance holds that if the disability arises

from the workman's imagining himself to be sick, more or less consciously, the accident is not the cause of the disability. This ruling is apparently in line with that of our own courts and industrial boards—the difficulty lies naturally in determining just how conscious of his wish-to-be-sick the claimant really is.

It may be well here to quote briefly the case of Julius Z—as a paradigm of those in question.

Julius was brought to the writer's office by a company official who seemed thoroughly of the opinion that the man was in a very serious condition. Z—was a Pole, aged 37, married with seven children. He had suffered a rather slight head injury not involving loss of consciousness, some months previously. Complaints had developed gradually, and especially after a herniotomy, mistakenly undertaken during the neurosis.

He was a miserable object, depressed and exceedingly hypochondriacal. He said he felt "no good," his head was "too sore," he was deaf in the right ear and there were sounds "like running water and whistles" in his head. He had pains in the head and back at times, and the seat of operation "cracked" when he bent over. When he read his eyes blurred and after treatment by an ear specialist (inflation?) his body felt "all swelled up." He felt weak and stayed at home all the time because his head felt "sore" when he went out of doors. At night his wife stated he slept poorly and roamed about the house.

Neurological examination was negative for objective findings. There was alleged tenderness to percussion over the left occipital region and he refused to bend over to pick a coin off the floor because his back was sore. Though he walked well and cooperated well in tests for muscle power in the upper extremities he made a great fuss over lifting the legs from the examining table against resistance—a common finding in such cases.

Conclusions in the case ran in part as follows: "The tendency to develop these conditions after accidents seems to be inherent in certain men. Whether the man is looking for compensation I can not say, but the idea is quite universal with men who are hurt nowadays while at work. Z—is not permanently disabled and for his own sake should be told that he can get well in a short time and go back to work. It is very easy to make a baby out of the patient in a case like this; in fact the most of them are so inclined to begin with."

A year later the company stated that Julius had been back at work for three months. Shortly after the above examination they paid him a thousand dollars and he recovered, purchased an automobile and was very happy, according to his wife's statement.

The writer has reviewed some thirty of his cases in which a diagnosis of compensation or

damages "neurosis" seemed most probable, no attempt being made to analyze the group statistically. Among the most marked cases were several women, one of whom, after two years of self-imposed invalidism and a final appearance in court upon a stretcher, has recently received by a compromise settlement a very handsome sum from a transportation company. A few months later she was reported to be getting about with a cane and in very good spirits because she was "well fixed for life." Her great chance came to her in her forties and after she had played a lone hand as a widow and nurse for many years. Who can say just how consciously she seized upon the opportunity? Another woman of the hypochondriacal-depressive type was a forlorn little middle-aged seamstress, separated from her husband and distressed by a disfiguring birthmark for the treatment of which she had come to Chicago shortly before she was moderately shaken up in a transportation accident.

The ages ranged from 19 to 59 years and the majority were laborers, with a sprinkling of clerks, carpenters, butchers, mechanics, bakers, etc. Only a few were single. Along with an added sense of responsibility, the desire for sympathy and appreciation no doubt plays a considerable role in the production and continuation of these conditions in married wage earners. The wife, if she accepts the man's illness as real—and why should she not?—must fear for her future and that of her children, thus reinforcing and adding to her husband's anxiety.

The injuries were, for the most part, falls or blows upon the head, occasionally the back, or an extremity. Unconsciousness was said to have occurred in about fifty per cent., but seemed to bear no particular relationship to the severity of the complaints. In fact one of the worst invalids had merely been struck upon the head by the toppling over of a heavy chair frame without resultant loss of consciousness or skull fracture. His complaints of headache, dizziness, weakness, loss of memory, poor sleep, etc., continued unabated until he received a few hundred dollars in settlement, after which he made a good recovery. X-ray evidence of skull fracture existed in a few and then was only linear in character. In a number of instances the em-



ploye evidenced resentment over the attitude of company doctors at the time of the accident and the care given, a state of mind which no doubt contributed to the development of the persistent complaints.

Head sensations were commonly headache and dizziness, the latter especially upon stooping over; commonly the two went together, but occasionally separately. Numbness, soreness, pressure and pains in the neck were also mentioned.

More general complaints were of forgetfulness, inability to concentrate, poor sleep, depression, weakness, fatigability, blurring of vision, loss of sexual desire and irritability. Two men asserted loss of the use of an arm, but both were quite plainly malingerers, that is, their wish-to-be sick was a conscious one.

Careful neurological examination developed no objective evidence of organic lesion of the nervous system. Muscle power was often poorly exerted and inconsistently, against resistance, although in general the subject cooperated well. Coordination tests were sometimes poorly done with the upper extremities, but the degree of failure to approximate was always the same and usually in the same direction. Corneal and faucial reflexes were absent in only two cases, anesthesia of the extremities was uncommon and never found in the hysterical form of stocking or glove loss of sensation. In the case of Tony M—, a dull appearing Pole, right sided hemianesthesia developed during examination; he denied all sensation upon this side but when told to say "No" whenever he did not feel touch or pin-prick (with his eyes closed) he did so very conscientiously. Tony had had no head injury but claimed loss of use of the right hand following a fall, and in spite of a statement that he was malingering the company contemplated settling the case upon a basis of 50% disability until it was discovered that he was carrying more accident insurance than his wages amounted to. Tremors were frequent though rarely marked. Profuse axillary sweating and dermatographia were noted at times and tenderness of the cranium or cervical spine to percussion was frequently claimed.

However, though careful routine neurological examination, including scrutiny of the optic nerve heads, may fail to reveal evidence of organic lesions in head-trauma cases, the possi-

bility of their existence is not to be ignored. Many writers look upon neurotic complaints following head injury as due to organic changes resultant upon concussion, and many explanations of its effect upon the brain substance have been offered. Thus years ago Obersteiner and Oppenheim adopted Erichsen's vague theory of *molecular change*, while later on Trotter laid the blame upon cerebral anaemia produced by the blow. Mott<sup>5</sup> and Cassasa<sup>6</sup> along with many others, have regarded capillary hemorrhages with their consecutive phenomena as the cause of intracranial pressure. McLaire<sup>7</sup> has suggested irritation of the spinal fluid secretory mechanism together with delayed absorption, while Tillman believes that concussion may cause minute tears due to the varying response of white and gray matter and blood vessels, each with a different specific gravity and degree of inertia.

Following the lead of other investigators Ingvar<sup>8</sup> centrifuged the brains of frogs and mice in their skulls and found that intracellular changes resulted, concluding from this research that "the traumatic endocellular displacements demonstrated in these experiments can not be considered to be unrelated to the genesis of many of the symptoms of the traumatic neuroses." Hassin<sup>9</sup> at about the same time—1923—convinced himself that definite histo-pathologic changes, softening and secondary degeneration, followed concussion of the spinal cord in a case presenting the clinical picture of amyotrophic lateral sclerosis.

Osnato and Giliberti<sup>10</sup> in 1927 compared the microscopic changes in a case of concussion with those exhibited in encephalitis lethargica, also tabulating the relative frequency of various symptoms and complaints with rather striking results. In such patients as complain of headache, dizziness, tinnitus, blurred vision, sleep disturbance and fatigability following even an apparently slight head injury the authors emphasize the necessity of determining the fields of vision—which may contract before papilledema sets in; of investigating the reaction of the vertical canals to caloric tests—failure points to organic mischief; and of inquiry into the possible presence of nystagmus along with dizziness upon change of posture. Complaints associated

with these findings they believe indicate what they term *traumatic encephalitis*.

Leopold Heidrich,<sup>11</sup> has recently reported cases of apparent traumatic neurosis beginning six months to a year after head injury involving loss of consciousness, with the customary complaints of headache, dizziness, spots before the eyes, sleeplessness, fatigability, emotionalism, forgetfulness, and loss of ambition. Neurological examination failed to reveal focal signs, but the spinal fluid pressure was found to be greatly increased (rarely increased cells or globulin content), encephalography revealed evidence of serous meningitis, and the absorption of sub-arachnoid injections of sodium iodide was considerably delayed. H. Claude<sup>12</sup> cites 22 cases with skull fracture in which complaints were relieved by lumbar puncture, and Penfield<sup>13</sup> has recently called attention to the unexpected relief of headache and dizziness in a few patients following the injection of air for encephalography, citing the suggestion of Foerster, Schwab and others that serous inflammation of the arachnoid with cyst formation may cause the symptoms.

Unfortunately the seeker after reimbursement is proverbially suspicious and suggestible so that diagnostic and therapeutic procedures are often difficult to carry out and quite apt to aggravate complaints—*vide* the case cited of Julius Z.—following Eustachian tube inflation and herniotomy. It is well to consider all of the etiologic probabilities in any given case, yet it is obviously improper, where an ordinary neurological examination is negative, to diagnose intracranial involvement without confirmatory evidence along the lines suggested by Heidrich, Osnato and Giliberti, and others.

Effort has been made to obtain a check-up on many cases after settlement, but aside from a few—typical examples, however—this has not been successful owing to the peculiar circumstances involved. The mass of evidence accumulated by others, however, goes to show that the only successful treatment in a high percentage (*vide* Denmark as cited above) of cases is settlement of the claim. The wish-to-be-sick, thus deprived of its objective, disappears and recovery ensues. Since juries and industrial boards persist in discriminating between malingering and hysterical reactions when awarding damages or

compensation, differentiating tests are highly desirable, tests which can be used as confidently as are those for feeble-mindedness. Unfortunately these are often quite impossible because there is no objective disability and no desire to cooperate in any procedure which may invalidate the subject's claim. Of course when a definite function is said to be lost or impaired, such as hearing, sight, sensation, power, etc., organic lesion can be ruled out, but the question may still remain as to the conscious or unconscious manufacture of symptoms. Observation of the subject when off guard is of course the best of all tests; and next to this as complete a mental inquiry as is possible under the guise of an investigation into the circumstances surrounding the accident and the present conditions—such research as is possible to determine personal make-up, character of family relationships, past reverses, unsatisfied desires, etc. Some information along these lines can be obtained during the preliminary interview, still more during the physical examination, and additional data when the latter is completed and the patient, who has dreaded the ordeal, is relaxed and loquacious.

Thus, when a man who has worked only three days for a company before receiving a minor injury reveals the fact that he has a small farm in Florida where he has left his wife in order to seek employment up North because they must have money for the necessary improvements, we have a clue to the real cause for his complaints—the wish to make capital out of a lucky accident. Perhaps he is simply a malingerer. But what of the man of fifty (with a young wife and baby) who acknowledges during a conversation about his injury that he has known for some time that he can not go on much longer at heavy work? He would like to set up a little shop of his own if he only had the money. This man will probably not feign illness, but the wish-to-be-sick is there and operative just the same. Neurosis and malingering are too often only different names for the same phenomenon—the translation of a mental state into physical symptoms.

*Conclusions:* 1. The long continued complaints of the great majority of post traumatic patients without neurological findings arise out of the wish-to-be-sick.

2. Similarity of symptoms and complaints, is probably due in non-organic cases to a persist-



ing recollection of disagreeable sensations directly following the accident, plus suggestion.

3. Medically speaking, it makes small difference whether the wish-to-be-sick operates consciously or unconsciously, since no hard and fast line can be drawn between these mechanisms working to a single end—self-preservation.

4. Courts and industrial boards, however, view the matter otherwise and recognize the so-called neurosis as a disability, whereas conscious simulation is summarily dealt with.

5. No rule of thumb can be used to differentiate these states of mind, but careful survey of the case as a whole will often reveal the desire-for-reimbursement motive.

6. Every effort should be made to rule out the possibility of organic lesion when head trauma has been accompanied by loss of consciousness, especially where complaints are limited to headache and dizziness. If, however, the patient will not submit to such tests as Heidrich and others suggest and a careful neurological examination reveals nothing, intra-cellular changes, capillary hemorrhages into the brain substance, meningeal hemorrhage, or serous, adhesive meningitis can not well be assumed to exist to explain the condition.

7. The workingman's compensation acts are humane and economically right. The development of the wish-to-be-sick reaction is a part of the price to be paid for their operation, human nature being as it is.

8. Considerate treatment of injured employees medically and by way of wage adjustments tends to prevent or modify emotional reaction to trauma.

9. In the absence of organic findings settlement of the case after a reasonable period of medical care and observation is rational treatment—but unfortunately too often impossible on account of meddlesome friends and lawyers.

10. More actual research into post traumatic nervous conditions is required, more thorough investigation of hospitalized patients, further efforts at treatment and last but not least, a systematic follow-up carried out over a period of years, especially of compensation cases following settlement. Casualty insurance companies can do these things if they will, and eventually such an inquiry could not but be bene-

ficial to insurer and insured, while our medical horizon in this direction would be considerably enlarged.

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#### HOW WE RESIST DISEASE\*

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MACOMB, ILL.

Do we resist disease?

We do not, as probably only one person in many thousand terminates life by the unassisted route of senility. Then again arises the question as to whether senility itself is not a terminal state resulting from a lifelong combat between the forces developed to maintain life and the outside forces which are always seeking to cripple or terminate it. Probably at present the most widely accepted scientific thought is that germ plasm is immortal, (Weismaun's theory). At the moment of fertilization an energy charge is set in action that first develops, and then in time begins weakening with old age as the inevitable. This energy charge is renewed from generation to generation. Be this as it may, nature has evolved life along the line: Eventually death, but delayed as long as possible, long enough at least to reproduce for perpetuation. In seeking a title for this paper my first thought was, "How Life Is Maintained." This would lead to an unrestricted study of physiology, physiochemistry, hygiene, etc., in addition to my real purpose, i. e. treating of the manner of the bodily reaction to the invasion of bacteria and other organic agents.

This phase of the natural phenomenon, life,

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can be understood only in the light of its evolution. There was a period when all life was unicellular. In an early geologic period certain strains acquired by means of chlorophyl and sunlight the power to store carbohydrates. These were the forerunners of plant life. Other strains developed the power to seek and absorb that which the first class had created and stored. These were the beginning of animal life. Plant life eventually evolved to where we have our many valuable food plants, etc., while animal life became more and more complex in its structure, but always living on the previously stored food stuffs. Plant life became immobile and so far as possible insensible to outer stimuli by protecting its surface with cellulose in the form of bark and other coverings. Chlorophyl gave it power to extract in excess of a living, sustenance from the inert, inorganic elements. The animal always seeking food, was ever increasing in sensibility and mobility and responding more and more to outer stimuli, and developed that most wonderful of all of nature's products, the nervous system, that goes between sensation and volition. Sensibility in time was followed by consciousness, which came into being when the animal was able to make a choice of two possible actions. Consciousness developed into intellect. First we thought to direct our actions, later developed the luxury of speculative thought. So man was first an artisan and very much later an artist. All this was built up by multiplying neurons and compounding reflexes. Man at the apex of animal life has this marvelous system at its best. So wonderfully has the nervous element developed that man can now contemplate his progress from the lowest to his present status.

Life always contending with the elements has evolved adaptation to varied circumstances. It is found sparsely in frigid areas and abundantly in the tropics and is maintained well up the mountain tops and in the depths of the ocean. This has not been gained without a struggle. Varying changes of temperature and moisture are but two of many circumstances limiting life, but other forms of life have constituted its greatest adversaries. Every species of plant or animal has its enemies in other species of plants and animals. It is outside the scope of this

paper to even outline the relation of mankind to life in general. How the various forms of life are interdependent. As examples, how certain forms of bacteria play an important role for the good of mankind, and how necessary for the future is the return of dead organic bodies to the elements. "Earth to Earth and Dust to Dust was not written of the Soul," but it certainly is a necessity when we consider the dead bodies. Bacteria and the lower forms of animal life render this biologic service and dead organic matter does not long encumber the earth. In the light of science, how futile is the effort of our undertakers in preservation of the dead. Do all they can, nature will get them, and what does it really matter whether it is tomorrow or a century hence? It's nature's way, so take your turn. The dependency of one form of life on other forms is finely shown in the nitrogen cycle. Nitrogen is necessary for all life. Two and one-half per cent. of man's body is nitrogen. In the metabolic activity of protoplasm, this activity is the basis of life, the nitrogen compounds are broken down and eliminated from the cell in a form unsuited for further use of the animal organism. By bacterial action they are oxidized to the forms of mineral nitrates and the free nitrogen of the air. Green plants by aid of sunshine build again nitrogenous substances which are passed to man and animals. Plants are aided in extracting nitrogen from the air by a bacterial specialist, which attaches itself to a higher form of plant life furnishing nitrogen to it as the plants in their turn furnish carbon and nitrogen to animal life.

That which composes my body I have assembled from far and near. Parts came from the wheat fields of Kansas, from the cornfields of Illinois, the gardens of our truck men, the oyster beds of the Chesapeake, the tropics of Central America, etc. A few centuries ago certain portions of my present make-up were probably chasing other portions of it across the plains and over the hills in the form of a red man seeking the meat of a deer or a buffalo. The carbohydrates in the bananas I ate today possibly may have energized a monkey as he shinned up a cocoanut tree.

The carbon dioxide which the animal kingdom exhales at each expiration will next year



be builded into the potato crop and bloom of the flowers, while these and other forms of plant life will labor all the hours of the summer nights in order that the world's supply of oxygen may be maintained at near 21% of the atmosphere.

We cannot separate ourselves from our surroundings, the great God Nature has tied us hand and foot to all organic and inorganic matter. But that which should content us is that the human species has always a little more than held its own. In preliterate times it slowly gained. Like all other species it sharpened its wits in order to survive. Previous to the time of tradition and written records there was history left in rocks to be read. Science is gradually tracing our beginning farther and farther into the remote past by slowly turning and reading these pages of the geologic eras. The fact stands out clearly that our species became more and more the master of the situation. It contended more or less successfully with the adversities of the elements, and the larger and stronger species proved no match to the ingenuity developed by *Homo sapiens*. Man's ability to make and use tools completed his mastery.

The members of the Medical Profession feel pride in keeping constantly in touch with the sources of science in order to relieve suffering and prolong life. When we are frank and truthful, we say we can only aid nature, and modestly, as the great Ambrose Paracelsus said, "I dressed their wounds and God healed them."

Do we not suspect that within the next five years some member of our organization is going to succumb to a living organism that needs to be magnified one thousand times to become handily visible. These subvisible organisms are our constant companions, but only occasionally are things just right for them to strike a telling blow. When one does strike a co-worker, there will be much consultation and endeavor on the part of the medical fraternity, and let us hope that wisdom will ride in the seat and only means to aid nature will be used. In order that we aid nature we must first understand how nature works for the preservation of our lives. Let us study some of these means.

A brief summary of the history of medicine would be a fitting introduction to this subject. It would provide a setting for relative develop-

ment of the art of medicine and later the scientific facts which make the practice of medicine the thing that it now is. The relating of this history I must forego because of time. At best this paper is but a partial presentation of the facts which give medicine its scientific basis. We do not belittle the art of our practice. Often the physician is financially successful in the degree of his accomplishment in these arts. Do you remember a doctor with the professional air that was worth as much as knowledge? How about the old fib of being busy night and day, told to intelligent people who were made to believe it? How about the solemn look, the cheerful word of encouragement? Are they not all in the art? I remember an old type physician whose presence made redolent the air with a distinctive odor. A patient of his always got better, so she said, when he came in the room "and she got a smell of him." To me it was nauseous. Another proof of the adage: "What is one's meat is another's poison."

How nearly scientific is this psychology has been shown in recent years. The future may make clear many now apparently queer and obscure phenomena.

Beginning in the seventeenth century pathological anatomy became the frame work for grouping diseases. Previous to this time, there had been a shifting classification. But the structural interpretation of disease gave more tangibility than any plan previously proposed. This method reached its fullest development under Virchow in the nineteenth century. While these studies were informative they never fully satisfied the physician in his struggle with disease. The dead house yielded nothing but disease in its static aspect. The great desire was to understand disease processes in their initial, intermediate and dynamic phases. This could not be done by studying only the dead tissue. This desire has in part been satisfied by the discovery of bacteria. Bacteriology has given to medicine its greatest single body of facts, while its study along with immunology and the biochemistry of metabolism has made disease more understandable.

Animate agents produce fifty per cent. of all diseases, while one-half of all deaths result from these causes. The list of diseases caused by ani-

mate agents is gradually growing, and it has been said, "The cause of any disease is not definitely settled until its germ has been discovered." While these diseases are due to the entrance and multiplication of some microscopic plant or animal-bacterium, spirochet, fungus, mould or protozoon, the conditions they produce, the symptoms, result from the fact that they are exogenous agents of foreign protein. The foreign protein produces disease leading to death or in case of survival, the reaction changes of immunity or hypersusceptibility. These facts, numerous and as yet confusing, are grouped in the special science of immunology. What could be more interesting or vital than the manner and method that nature has devised to protect the health and lives of man and beast?

In their relation to the human body bacteria are beneficial, indifferent, or more or less injurious. Against the latter our bodies are protected in two ways, viz: resistance to their entrance and in case of failure to resist, destruction of the microorganisms. The principal paths of entrance are broken skin, respiratory tract, genital tract and the alimentary system. The unbroken skin is very resistant except to such parasites as the hook worm. Normally "the skin is inhabited but not infected." In case of the eyes, exposed to the dust in the air and contamination from soiled fingers, nature has provided a constant irrigation with a mildly germicidal fluid, tears. It has been said that all shed tears but the newborn and dying. This accounts in part for the large number of eye infections during the first few days of life. The respiratory tract under ordinary conditions can withstand the 300,000 bacteria daily taken into the lungs. Nowhere is shown the wonderful resistance of delicate epithelial cells so well as in the instance of the digestive tract. The mouth is alive with myriads of bacteria as shown over three centuries ago by Leuwenhoek. The colon is so good an incubator that one-third of the fecal matter is bacteria.

Even though bacteria get past these first barriers, infection may not result as they are often met by antagonistic substances that destroy them, or they find conditions unfavorable to their growth. Multiplication is necessary for infection. In case of infection they may be lim-

ited to a small area and are prevented from making further progress. Again the organism may be discharged into the blood streams (bacteremia). They may here escape from the protective blood antibodies and start various new foci (pyemia). Again they may multiply in the blood stream (septicemia).

That different bacteria have preferred channels of entry, the following experiments of Park will illustrate. Into the skin of certain animals were rubbed live bacteria of virulent streptococcus, typhoid and diphtheria. As a result the typhoid bacilli produced no lesion. The diphtheria produced but little, while the streptococcus in some instances resulted in a fatal blood poisoning. He placed them again on patches in the throat. The typhoid was again harmless, the streptococcus may or may not give a sore throat, while the diphtheria gave its characteristic symptoms. The three were passed into the intestines, and the diphtheria and streptococcus were harmless, while typhoid developed from the other.

The results of a bacterial invasion depend upon the number and virulency of the organisms and the sufficiency, or otherwise, of the bodily protective functions. Immunity is the physical state enabling a body to resist an infectious disease, also the recovery from such a disease if contracted depends on the bodily power to create this immunity. If such immunity results from the bodily resources it is an active immunity; if from the administration of a drug or foreign material, it is a passive immunity. Examples of passive immunity are quinine in malaria and anti-toxin in diphtheria.

Bacteria affect the body in many different ways, but the three most important of the effects are: 1. destruction of bodily cells or tissues, 2. formation of toxins, and 3. formation of poisonous split proteins. The method of the destruction of cells and tissues is not clear, but in addition to the direct action of the toxins there may be a specific enzyme which actually disintegrates the body cells and tissues. The toxins are formed inside the bacteria and are excreted by them. These toxins pass directly into the surrounding tissues, damaging them, or are absorbed into the blood stream being car-



ried to more distant tissue where the injurious effects are noted. In case of tetanus and botulism, the nerves absorb the toxins.

The two effects (destruction of tissues and toxins), described above are true of but few of the ordinary human diseases. With a majority of the pathogenic bacteria the injurious effects are due to a different cause. Ordinarily bacteria multiply in great numbers before the bodily defenses are raised to the point where they gain control of the situation. When they do, the bacteria are killed and disintegrated. During this disintegration many substances are split off and set free which are irritating and poisonous to the various tissues of the body. These split proteins, formerly called "endotoxins," vary in their selection of the tissues they affect? These effects are the symptoms of the disease. The physician can frequently determine the infecting agent by the tissues involved. Recent investigation indicated that these split-proteins may be obtained from ordinary food protein (eggs, milk) by treatment with acids, alcohol, etc.

There is a fourth way in which bacteria are contributing to disease. Protein food in preparation or in storage may be partially digested by bacteria and ptomaines formed, many of which are harmless, while others are very poisonous. In order to distinguish between toxins, split-proteins and ptomaines, the following comparison is made; (a) toxins are formed and excreted by living bacteria, ptomaines result from bacterial action on their food material, and have never been a part of their metabolism. Split-proteins appear only at the death and dissolution of the bacteria; (b) very few bacteria produce a true toxin, while any kind of bacteria at decomposition may result in poisonous split proteins; (c) toxins or poisonous split-proteins have never been reduced to chemical formulas while ptomaines are nitrogenous compounds of carbon and hydrogen with oxygen the fourth element in the most poisonous; (d) all the bacterial toxins are poisonous, while many of the ptomaines are not; (e) toxins stimulate the body to form anti-toxins with their resultant immunity, while such is not the case with split-proteins and ptomaines. These latter are eliminated from the system without lessening the

susceptibility to a repetition of the poisoning in case they are again absorbed.

Bacteria are possessed, like all forms of life, with the desire for self-preservation. It is not expected that they are completely defenseless. They secrete a substance known as aggressins, the purpose of which is to counteract the various blood antibodies. These aggressins are insufficient in every instance where recovery of the patient occurs.

The normal body meets the attack of bacteria in two ways. It increases the white corpuscles, and creates special antibodies which circulate in the blood and lymph. The white cells are formed in the bone marrow and lymph glands. These same tissues largely form the antibodies with the spleen as a probable additional source. There are evidences that these antibodies may come from any of the bodily tissues.

As was stated, the effects of the bacteria are due to two causes: the toxins they produce, and certain poisonous substances released at their death. The bodily protective function responds to bacterial invasion in two main lines of defensive material: antitoxins to neutralize the toxins, and substances to destroy the bacteria or aid the white blood cells in their destruction. This latter is essential and final, while the antitoxin is necessary to protect the various functions while nature gathers sufficient force to annihilate the invading foe. It is important that the body responds promptly as the greater the multiplication of bacteria, the greater the amount of poisonous split-proteins there will be to be eliminated. Upon the amount of these poisons depends the severity of the symptoms, and the outcome of the disease—death or recovery. Among the many influences lowering the bodily resistance are overwork, worry, fear, any type of nervous strain, lack of proper nourishment, either deficiency in quantity or quality, or improper digestion which leaves unsatisfied or unoccupied the cell affinities. This last gives opportunity for toxins or other bacterial products to unite with the cells with the resultant impairment of function.

The bodily cells, in common with all life, possess the power to absorb certain substances which are required for their support and growth. This selective power is an individual

matter with each type of cell. Various kinds of cells require various substances. This variety is supplied by the food in a mixed diet. Bacteria produce substances which may have the same combining power as the various nutritive substances. These may be absorbed by the cells and prove toxic, causing the cells to become irritated and to function poorly. While comparatively few bacteria produce toxins, their importance so far as danger to the human race is very great. Diphtheria, tetanus, gas gangrene, one type of dysentery (Shigás), botulism, etc. are the principle diseases in which toxins are responsible for the symptoms and danger.

Toxins are the most concentrated form of poisonous material. One cc of tetanus toxin is sufficient to kill 75,000 guinea pigs. One ounce of diphtheria toxin will kill 600,000 guinea pigs or 75,000 large dogs. It is for these deadly poisons that the body cells must respond with the neutralizing antitoxins. We cannot much wonder that in the old days, before passive immunity, that the sick so frequently succumbed to this dread disease. The death rate formerly was 30 to 50%, and is now practically zero if antitoxin is given early enough. Early recognition and a sufficient dose of antitoxin gives these results. With tetanus antitoxin we have prevention and curative results depending upon site of original wound, time of development of symptoms, and vigor of the application of the treatment.

For the destruction of the bacteria themselves, as was previously mentioned, we have a lysin causing their immediate destruction, and substances aiding the white cells of the blood to absorb and digest them. Agglutinins cause the bacteria to lose their motility and gather in clumps. This facilitates their ingestion by the white cells. Opsonin is another antibody aiding the white cells in the contest with bacteria. This substance appears to disable the germs making them more easily taken in by the leucocytes. They have been likened to a sauce, making the bacteria more palatable for the white cells.

The fate of the bacterium after its contact with the lysin is death and dissolution. Its fate after its ingestion by the white cells is not so certain. The cell may be the executioner, or may only play the role, as some think, of a

policeman who carries it to the lymph nodes or spleen, where destruction awaits it.

Precipitin is a substance very closely allied to agglutinins. Its action is on colloid particles or proteins in solution. They are much slower in their response to an infection and are more difficult to demonstrate. This difficulty arises in securing a clear solution necessary to show the clouding of the precipitation.

Precipitins can be elicited against such unformed proteins as milk, serum, white of egg, etc. Animals may be sensitized to these substances and used to identify them. These reactions are so specific and delicate that a determination can be made between the whites of a hen's egg and a duck's egg; between human milk and cow's milk. This test is used as a legal aid. A blood stain can be shown as that of human or animal origin. Dried blood from boards or clothing can be tested with accurate results. In one case a blood stain sixty-six years old gave satisfactory results when tested. Claims have been made of satisfactory test on the blood of two mummies, one 2000 years old and another 5000 years old. These tests are also made to determine the kind of meat in sausage, etc.

There is a group of associated phenomena of such width of range that it includes itching of the nose and running eyes as the mildest of its manifestations to sudden collapse and death in its greatest. To name specifically some of these: 1. Sensitiveness to flower pollen in hay fever and asthma; 2. To epidermal cells of cats and horses producing asthma; 3. Susceptibility to certain articles of diet as urticaria from strawberries, shell fish, etc.; 4. Temporary discomfort from the later injections of a vaccine; 5. Milder "serum sickness"; 6. True anaphylactic shock and death from giving a serum for prophylaxis or cure. The term anaphylaxis (without protection) is applied to these reactions. They are due to a sensitized condition resulting from a previous inoculation of the same protein substance. A definite time must elapse before such sensitiveness is developed. Magendi, a French physiologist, in 1839 first pointed out this reaction. It was not until the use of antitoxic serums became common with their untoward results that the full significance was understood. Flexner, in America, in 1894 and Arthus, a



Frenchman, in 1903, made the experiment that cleared up the subject. There are two doses of foreign protein concerned in the reaction; first is the "sensitizing dose," which may be comparatively small, and second, the "shock dose," the one producing the reaction. This last may be small or large, with results conforming to size of the dose, varying from a slight local reddening to a generalized reaction with collapse and death. The foods most frequently the cause of trouble are eggs and milk, while strawberries and shell fish are not rarely the cause. Among the most frequent results are found in the seasonal attacks of hay fever and asthma, while the most striking are from serum treatment. An occasional fatality (one in 50,000) results from the refined anti-diphtheritic serum, while serious symptoms appear in one in 10,000. The percentage is much higher in tetanus antitoxin, as the product so far is not so refined as in the diphtheria serum.

The question arises as to what uses can be made of these biological facts. Diagnosis in many diseases, and prevention and cure in the large group of communicable diseases due to micro-organisms. In the non-transferable disease we have three types:

(a) Nutritional (scurvy, rickets); (b) Functional (kidney, thyroid, pancreatic disturbances); (c) Due to chemical poisons (lead, arsenic, phosphorus).

It is now known that many of the functional and nutritional diseases are end results of long absorption of bacterial toxic material. Prominent among such sources are tonsils, teeth, gall bladder, bowel stasis, etc.

In diagnosis the bacterium itself by its manner of growth, shape, motility, or staining properties, is the determining factor in diphtheria, tuberculosis, gonorrhea, malaria, sleeping sickness, syphilis and many others. The agglutinins are used in diagnosing typhoid, and so powerful are the agglutinins in this disease that in certain immune individuals the reaction occurs in a dilution as high as 10,000. Recently an experiment was made with blood from a horse immunized against typhoid which showed a potency so high that one drop of serum diluted in a litre of salt solution agglutinated all the billions of typhoid bacilli grown on four slant cul-

ture tubes. The agglutination test is useful in identifying the type of pneumococcus. Also it is used in cholera, the paratyphoids, dysentery, etc. No use as yet has been made of this reaction in therapeutic measures. It is the principal means of matching blood in transfusions.

The white blood count is frequently an aid in diagnosis. It does not have so much significance in prognosis as it indicates that the patient is putting up a strong fight, but does not indicate the outcome of the fight. The phagocytic role of the white cell is very important and working with the opsonins is one of the best defenses against bacteria.

The bactericidal power of the blood is due to lysin that may be in varying quantities in normal blood. In an immune blood this power is greatly increased. One cc of the serum of an immune rabbit caused the complete disappearance of 50,000 anthrax bacilli in four minutes. The action of lysins is specific, and while a blood may have a lysin against one species of bacteria, another kind will have no difficulty in living in it. Lysins are formed not only against bacteria but against other foreign cells. The red cells of various animals have been used. The lysins are produced by injecting in the veins of an animal at intervals the substance it is desired to produce a lysin against. The specificity of the reaction is so great that the test can be used in criminal trials to prove a blood stain to be from human or other animal. If the stain is old, the test is not as reliable as that of the precipitins.

On these and other biological facts is built much of the present day medical practice. These facts will serve as a basis for future discoveries of great significance to the human race. We have not even remotely approached the prophecy of Pasteur when he proclaimed to a diseased mankind: "It is in the power of man to make parasitic maladies disappear from the earth." Without question, more children are now reaching maturity than formerly, and an increasing number are coming to the period of senescence.

A brief catalogue of the outstanding steps in scientific discoveries of use to medicine will be of value.

Medical beliefs and practices of ancient days were usually erroneous. One exception to this is a Sanskrit theory of the 6th century that claimed

a relation between mosquitoes and malaria. Such beliefs as disease being caused by evil spirits, the demonical theory, astronomical forces influencing the welfare of mankind, had their adherents. Hippocrates' four body humors: blood, phlegm, bile and black bile, held attention of the physicians for two thousand years and led to the practice of bleeding at so late a date that George Washington came to an untimely death not by tonsillitis, but from the treatment received. The ancients had many sanitary observances conducive to health of the people, viz., the aqueducts of Italy and France, purification by fire (Bible), Jewish regulations concerning lepers, Chinese inoculation of smallpox, etc. We must come down the ages to 1536 to get satisfying facts. This year Para began using mild lotions in treatment of wounds.

Frasicator (1546) gave the earliest conception of the contagiousness of disease that led to a practical measure — quarantine. He claimed disease due to "living material" and transmitted by immediate contact, and intermediate agents—fomites.

Janssen made the first microscope in 1590.

In 1659 Leeuwenhoek, a lens grinding janitor, was the first to picture bacteria, terming them "little beasties."

Spontaneous generation lived a long life. Aristotle, three centuries before Christ, declared it, and not until 1769 did Spallanzani prove that air was necessary for this life to begin.

It remained for another, Louis Pasteur, to demonstrate positively that life always came from previous life. Pasteur, of artistic temperament, educated as a chemist, was destined to enter upon investigations, the results of which have seldom if ever been equaled in their importance to the human race. Notably among his many discoveries are: yeasts are alive and change sugar to alcohol; that acid results from growths of rod like, motile microbes; confirmation of the theory of the bacterial cause of rancid butter and the spoiling of other foods. Pasteurization resulted from his experiments, helping the wine growers free their wine from contamination. Diseases among the silk worms took six years of his efforts. His prophylaxis for rabies was probably his crowning effort, be-

cause it dealt with a dreadful disease and established definitely that infectious diseases were due to bacteria.

In 1796 Jenner vaccinated against smallpox with cow pox, and was censured by the medical profession as brutal and inhuman.

Following the trail blazed by Pasteur were two men in nearby countries making practical applications of his methods and discoveries, Lister in Edinburgh in his surgical clinic treating his wounds antiseptically, and Koch in Germany discovering the bacteria causing anthrax, cholera and tuberculosis.

This brings us to the latter half of the nineteenth century when every year added some important fact.

Steam sterilization was a single item of great advance.

Klebs, Loeffler, Roux and Behring gave the solution in diphtheria.

In 1882 Metchnikoff revealed the role of the phagocytes.

In 1900 Walter Reed and his commission found the cause of the transmission of yellow fever.

In 1895 Ross found the plasmodium of malaria.

In 1898 Bordet, a Belgian, discovered that lysins are formed in the blood against foreign material, bacteria, corpuscles, etc.

In 1903 Wright discovered opsonins.

In 1904 Smith definitely established the idea of anaphylaxis.

In 1908 Flexner gave the cause of epidemic cerebromeningitis.

In 1913 Behring discovered the "toxin-anti-toxin" combination as diphtheria vaccine.

Knowing the causal agents, their manner of growth and means of transmission, give in diseases our opportunity to prevent their spread. So prevention has become the watchword. Early recognition is often a necessity for both a cure and the curtailment of an epidemic. As a result, all over the globe laboratories are erected and are ever on the watch to keep away these enemies of mankind—the bacteria. How prophetic were the words of Pasteur when he declared them to be "The sacred dwellings, the temples of the future, of riches and comfort."



## OVARIAN INSUFFICIENCY AND OVARIAN THERAPY\*

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*Introduction*—A wise man once remarked that in medicine empiricism had always led the way. Quinine was just as effective in malaria before the plasmodium was discovered as it has been since that time. This empiricism is also true of ovarian therapy.

The first attempts along the lines of ovarian therapy probably were made at the Landau Clinic, in Berlin, in 1896. Mainzer<sup>1</sup> reports the case of a girl of 23 in whom double salpingo-ooporectomy had been performed for extensive pelvic inflammatory disease. She developed severe vasomotor symptoms, which failed to respond to ordinary methods of treatment. Ovarian therapy was then resorted to, probably by mouth. Before the beginning of the treatment, the patient averaged about twelve severe attacks per day of flushing of the head, giddiness, sweats, etc. Within three days of the beginning of the treatment the attacks had diminished to a daily average of five. To make sure that the effect was not merely psychic, the patient received a substitute (scraped meat) on the seventh and eighth days, and felt much worse. On again being given the ovarian substance, improvement was again noted, to be followed by retrogression when the substitute was given again on the fourteenth day.

*The Clinician urged to wait*—In spite of these things, the clinician is being urged constantly to wait until the experimental physiologist and the bio-chemist have completed their investigations and given their blessings to endocrine therapy before he uses it in private practice. Yet nearly every advance made by these workers has strengthened the position of the clinician. Discoveries by the physiologists have in no way changed our conception of the clinical picture of ovarian insufficiency nor the indications for therapy. The clinician cannot refuse to use ovarian preparations in the treatment of his patients merely because the physiologists announce that their knowledge of ovarian function is incomplete and ovarian preparations available now less desirable than they are apt to be a few years

hence. We are all willing to admit with the laboratory workers that they have failed, up to date, to isolate the hormones of the ovary in the proper concentration and to furnish them in the best possible manner for clinical use; but we are not ready to throw our clinical observations overboard because of the physiologist's difficulties. A few years ago it was said that ovarian preparations could have no effect when given by mouth, and some writers intimated that no commercial preparations could have any beneficial action because the hormone was lost when the manufacturer subjected the ovary to a degreasing process. Yet Novak<sup>2</sup> says, "an increasing number of observations indicate that even by mouth the principle exerts an estrus producing effect on spayed animals." Laquer and DeJong<sup>3</sup> report the preparation of a water soluble hormone from the ovary. And the J. A. M. A.<sup>4</sup> says, "This raises . . . the question . . . whether the vaginal reactions . . . are really reliably criteria of ovarian hormone action." Novak<sup>5</sup> says "Contributions are being made so rapidly that no present point of view should be urged too dogmatically or too inflexibly." This is certainly the most conservative and sensible attitude that could be advised at this time. Novak<sup>6</sup> also says, "Furthermore it is not fair to criticize the clinicians too harshly on this point. Is any other method of treatment of these symptoms based on grounds which are any more rational or does any other give better results? If so I do not know of it." This is probably the spirit that actuates most of us. We are eager for the physiologist to give us something more definite and satisfactory, but in the meantime these patients demand relief and this form of therapy seems to give relief better than any other.

Some years ago when Allen and Doisy isolated the female sex hormone from the liquor folliculi we were somehow given the impression that it could be found in no other part of the ovary and that from the very nature of the thing it could have no effect by mouth and that commercial preparations with which we had been supplied up to that time could have had no beneficial effect on the patient. Yet it was not long until Frank and his co-workers isolated the same hormone from the corpus luteum and the placenta. They gave the name "gestational gland" to the three structures; i. e., the liquor folliculi, corpus luteum, and placenta. Later the same

\*Read before Rock Island County Medical Society, Oct. 16, 1928.

hormone was isolated from the blood stream a few days before the menstrual period, and from the menstrual blood during the first day or two of the flow. It has since been isolated from the blood of the pregnant woman and from her urine. One firm is now making a commercial preparation of the female sex hormone from the amniotic fluid of cattle.

*Should Ovarian Therapy be used exclusively in a teaching clinic?*—Novak<sup>7</sup> suggests that if these preparations are used clinically it should be done in the large teaching clinic. But there are many objections to this. The material in such clinics is—or should be—of lower grade mentally than that met in private practice. This makes cooperation less satisfactory and the follow-up work more difficult. Contact with such patients is not apt to be maintained over so long a period of time as is the case in private practice. Finally, the private practitioner by intermittent medication such as was mentioned in the Landau clinic exercises a control over his cases and results which is probably as accurate and scientific as will ever be possible in the case of the human animal.

Even Novak<sup>8</sup>, though very pessimistic, says, "I do not, of course, mean to indicate that all efforts at therapy in the human subject should be withheld until our knowledge is more complete. This, indeed, would be a mistake, for, after all, the problem of the human sex cycle can in some of its aspects be studied best, and perhaps only, in the human subject, for the animal cycle differs from the human cycle in many respects. No harm is done the patient by the use of any of the extracts that have been employed."

#### *Etiology of ovarian insufficiency—*

1. Infections either acute as flu, typhoid, etc., or chronic such as tuberculosis, or other wasting diseases, pernicious anemia, etc.

2. Local infections in the pelvis, such as gonorrhea or puerperal sepsis.

3. Endocrinopathies, hyperthyroidism, hypopituitarism, tumors of the adrenal cortex, vitamin deficiency.

4. Congenital, these cases may all be due to some endocrinopathy.

#### *Occurrence—*

Quoting Novak<sup>9</sup> again, "Among the clinical manifestations which may reasonably be ascribed

to hypofunction of the ovary are the following:

1. Amenorrhea (absence of menstruation), hypomenorrhea (scanty menstruation), and oligomenorrhea (abnormally infrequent menstruation), delayed puberty, and premature menopause.

2. The vasomotor symptoms of the menopause (either natural or artificial).

3. Some cases of sterility (probably only a small proportion).

4. Possibly some cases of so-called primary dysmenorrhea, genital hypoplasia, obesity, repeated abortion, and menstrual headaches."

Engelbach<sup>10</sup> says, "I cannot agree that these women are comparatively free from symptoms, are happy and have no serious effects from the cessation of the menses. Analyses in a large number of cases showed that they have very serious reactions. Anyone who sees a great number of these patients with ovarian insufficiency, either primary or secondary, must realize that they do have very serious constitutional disability. The disability is often extreme; for instance, persistent vomiting, over a long series of years, with very marked nervous and cardio-vascular symptomatology so severe as to incapacitate these patients absolutely. It has been my experience in treating a large number of castrates, aged from 15 to 16 years and up to late adult life, that positive relief from these symptoms was obtained by giving large doses of ovarian substance hypodermically."

Drips and Ford<sup>11</sup> say, "systemic complaints which we regard as due to the basic ovarian disturbance are common. Patients with a tendency to amenorrhea experience menstrual molimen manifested by backache, bearing down or cramping pains in the pelvis, nausea or vomiting, headache and a chilly sensation. Persistent vomiting or anorexia nervosa is a most distressing neurotic manifestation which is present in some cases." Drips and Ford included under ovarian insufficiency, cases of metrorrhagia showing extreme irregularity in the occurrence of the flow. Profuse and prolonged periods being interspersed by considerable periods of amenorrhea. For these the hypophysis was irradiated with beneficial results in most cases. It is doubtful if such cases are due to ovarian insufficiency. Engelbach and Tierney<sup>12</sup> referred to such cases as being due to hypopituitarism of the anterior lobe. The results of Drip and Ford together with



the recent work of Evans and Simpson<sup>13</sup> make it seem extremely likely that such menstrual irregularities are due to some disturbance of the pituitary function rather than to a primary hypogonadism.

My experience coincides with that of Engelbach. Nor would I agree with Novak that cases of amenorrhea occurring in the course of tuberculosis should be disregarded. While the ovarian insufficiency is undoubtedly secondary and due to the tuberculous infection, yet in my experience the proper use of substitution therapy in the form of ovarian preparations by mouth or hypodermic, preferably the latter, has a very favorable influence on the patient's health. One case under my care gained 10 lbs. the first few weeks after she began taking ovarian substance by mouth, and 25 lbs. the first year.

It is likely that the gynecologist does not see patients suffering from the same symptoms as does the internist or endocrinologist. The latter are apt to be confronted with gastro-intestinal symptoms of nausea and vomiting, or with nervous symptoms such as occur at the menopause, or earlier in life, if the insufficiency is of severe degree. While the gynecologist probably sees more cases offering as the presenting symptom some irregularity of the menstrual flow varying from a more or less complete amenorrhea or menorrhagia. In these conditions ovarian therapy in my hands has been less successful than in the ones mentioned above as being the types most frequently seen by the internist or endocrinologist. It is possible that Engelbach is correct in his theory that the ovary has other hormones performing other functions than the female sex hormone. Certain it is that ovarian therapy is more successful in the field of subjective complaints than in regulating disturbances of the menstrual flow. The old argument that this is due to psychology is ever advanced against the correctness of this view, but even Novak<sup>14</sup> says it is hard to escape the conclusion that ovarian preparations were of some value.

Amenorrhea is probably not due to primary ovarian insufficiency nearly so frequently as is believed by the profession at large. Perhaps it is due to hypopituitarism more often than to hypogonadism. It is also due to thyroid disorders and sometimes to tumors of the adrenal cortex. Cases of menorrhagia or metrorrhagia

so infrequently yield to ovarian therapy that I am doubtful if such cases are due to ovarian insufficiency. Cases of menorrhagia may be due to persistent follicle cyst with lack of formation of a corpus luteum—a failure of ovulation. Papanicolaou in 1927 reported that by injecting a corpus luteum preparation into guinea pigs he could bring about a definite retardation of ovulation and could delay or inhibit estrus in this animal. In other words the hormone in the corpus luteum seems to be somewhat antagonistic to that obtained from the follicle fluid. A number of observers have reported that by injecting corpus luteum preparations a number of days before the expected menorrhagic period, the flow could be materially reduced and the period shortened.

*Wrong policy encouraged in Endocrine Disorders*—In the field of endocrine disorders we do not follow the practice advised in other fields of medicine, that of attempting to recognize diseased conditions early or before they become severe. We reverse that practice in dealing with the endocrinopathies and insist that they be far advanced or severe before a diagnosis is made. When we consider how readily the ovary is affected by infection, vitamin deficiency, etc., it is not difficult to believe that cases of ovarian insufficiency are of much commoner occurrence than is usually taught. Delayed puberty is many times due to this. Dysmenorrhea frequently arises from the same cause. The earlier treatment is begun in such cases, the greater the likelihood of prompt and permanent cure. Graves<sup>15</sup> says cases of dysmenorrhea yield much more readily in young women than in older ones. He gives the ages 18 to 25 as being the most favorable. My experience agrees with this, although dysmenorrhea in older women frequently yields to this treatment. Hypodermic administration, of course, being much more efficacious than the oral route.

*Symptoms*—For my own guidance I have enumerated the following symptoms as those occurring most frequently in ovarian insufficiency:

1. Dysmenorrhea, especially that type where the pain occurs before the flow begins and persists throughout the period.

2. Abdominal pain occurring near the periods, located many times in the right lower quadrant but being more of a burning character than that usually associated with acute appendicitis.

Though it needs to be considered in making a diagnosis of chronic appendicitis.

3. Nausea and vomiting—this resembles that occurring in the early months of pregnancy. Indeed, the nausea and vomiting of early pregnancy may be due to some sort of ovarian insufficiency, at any rate, it sometimes yields to treatment by injections of corpus luteum preparations when nothing else avails.

4. Menstrual headaches are perhaps due to ovarian insufficiency, but perhaps are as often due to a concomitant hypopituitarism.

5. Irregularity in the character in the flow and in the pain that accompanies it. Normal periods free from pain alternate with scanty painful ones.

6. Irregularity in the menstrual periods—i. e., where the intervals are too long.

7. Numbness of the extremities. This occurs especially at night and most frequently in women passing through the menopause. Hot flashes and other phenomena of the menopause.

8. Mental depression. This is common and almost characteristic. That it is due to ovarian insufficiency is shown by the therapeutic test. The injection of ovarian preparations hypodermically many times produces such prompt and striking relief as to be quite astonishing. The injection of other substances is not followed by any such relief.

9. Mental and physical sluggishness occurring at the periods.

10. Lack of strength and endurance—not due to other causes.

11. Amenorrhea, relative or absolute, sometimes due to this cause. Other factors, endocrine and otherwise, should be looked for. Other endocrine glands are almost as frequently at fault as the ovary.

12. Colds or sore throats occurring at the menstrual periods. This is a very common complaint, and a little inquiry into cases of frequently recurring colds will show a large number exhibiting this coincidence.

13. Acne occurs frequently, only at periods.

*Diagnosis*—This depends on a careful history which should elicit an etiological factor and a considerable percentage of the symptoms just enumerated. A careful and very thorough physical examination which should rule out other conditions. Such laboratory work as will be of assistance in excluding other conditions. We

have no laboratory tests at this time which are of any direct positive value in determining the state of the ovarian function. It is quite likely that Frank will develop his test for the female sex hormone to the point where it can be used in practice as well as in research work?

*Differential diagnosis*—Tuberculosis, pernicious anemia, and other wasting diseases should be discovered if present. While they may cause ovarian insufficiency, this should be recognized as secondary in such cases. Neurasthenia and manic depressive states—ovarian insufficiency many times causes these conditions, and it sometimes is difficult or impossible to tell how much the ovarian condition is responsible for the symptoms except by therapeutic test. A good many case reports occur in the literature showing the beneficial effects of ovarian therapy on these conditions where there is an accompanying or causative ovarian insufficiency. In cases of amenorrhea one should first exclude tuberculosis and other wasting diseases. After the search has narrowed to the endocrinopathies, one should look for signs of tumor of the adrenal cortex—roughening of the skin, increased hair suit over the body with falling of the hair on the head or even baldness. Increase in muscular strength, coarseness of the voice, and a general decrease in the feminine characteristics. Hypopituitarism of the anterior lobe: If this is of the pre-adolescent type, the lack of development of the osseous and muscular system is characteristic; if of the post-adolescent type, there is a loss of muscle tone, libido, increase in the quantity and frequency of the menstrual periods. Sometimes extreme irregularity of the periods—menorrhagia alternating with considerable periods of amenorrhea. Hyperthyroidism of course needs no mention.

*Treatment*—This consists of the usual attention to hygiene and diet and the general health with specific treatment by the administration of ovarian preparations. The preparation used and the method of administration will depend somewhat on the preference of the men using it, though the hypodermic administration is much more certain in its results than is that by mouth.

*Preparations*—Three preparations are available: Ovarian substance being the whole ovary, desiccated for use by mouth in the dose of five grains or more t. i. d. or a watery or oily ex-



tract of the same for use by hypodermic. Corpora lutea preparations consist of the dried corpora lutea for use by mouth in the same dosage as that of the whole ovary, or liquid extracts for hypodermic use. And finally, ovarian residue being that portion of the ovary remaining after the corpora lutea are removed. This is desiccated for use by mouth or extracted by water or other liquids for hypodermic use. It is quite likely that the manufacturer is unable to remove all the corpora lutea, and that as a consequence ovarian residue is really ovarian substance. These three preparations are sold under a variety of names, especially those for hypodermic use.

*Administration*—There is no question but that better results are obtained when these preparations are given subcutaneously or intramuscularly or even intravenously—though the latter route needs to be used infrequently. The dosage usually given is one c.c., representing the amount obtained from one or two grams of the dried preparation. The interval at which it is given depends on the individual case. Some women experience relief of their nervous or gastro-intestinal symptoms, lasting for 24 or 48 hours after an injection; others an even longer period. In the nausea and vomiting of pregnancy, it may be necessary to repeat the dose two or three times per day. Some cases presenting nervous or gastro-intestinal symptoms report great relief if the injections are given at intervals of a week. There is some objection to hypodermic medication, but any medication represents the lesser of two evils, even when it is a life saving proposition.

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## COMPOUND COMMINUTED FRACTURE —A CASE REPORT

F. C. SCHURMEIER, M. D., F. A. C. S.

ELGIN, ILL.

The following case is reported because it presents several points of unusual interest.

On November 5, 1926, Albert L., age 7 years, was one of several boys of his age who were playing about a large telephone cable reel which stood on the tree bank near Albert's parental home. The reel tumbled off the tree bank, crushing the right leg of the boy in the mire of the gutter—street was not paved.

Shortly after the accident the writer found the little patient lying on a bed to which he had been carried by neighbors. Condition of the patient was bad and there was evidently much loss of blood. A tourniquet above the fracture, which

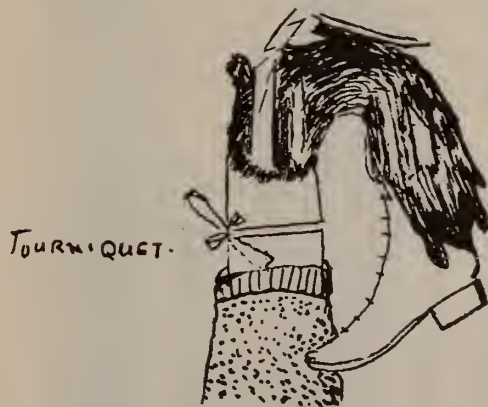


FIG. 1. FRACTURED LEG BEFORE  
REDUCTION.—DIAGRAMMATIC.

Fig. 1. Fractured Leg Before Reduction.—Diagrammatic

looked like a Boy Scout job, I believe, prevented a fatal hemorrhage.

Fig. 1. A drawing from memory soon after the accident shows better than words can describe the nature of the injury. The soft parts were severed and stripped off the bones for a considerable distance except a narrow strip on the fibular side, where soft parts including skin remained intact, and a deep flat strand posteriorly including the posterior tibial and popliteal arteries. In this flap pulsation could be felt.

The patient was taken to St. Joseph Hospital, put to sleep, bleeding points ligated, wound

cleansed of dirt and particles of clothing, the bone fragments placed in the best possible position, torn muscles sutured end to end, skin wound partly closed.

The injured limb was placed in a fracture box and Carrel-Dakin treatment instituted.

Amputation was seriously considered. Should the foot not live I would amputate as soon as that unfavorable result was inevitable.

About the fourth day very light Buck's extension was applied.

On December 17 the fractured limb was



Figs. 2 and 3. (Right)—Injured Leg Is Straight Anatomically, and No Undue Rotation of Foot, No Compensatory Lengthening. Note 2 views—same lad.

placed in a plaster cast with two large windows through which the wounds could be dressed.

Recovery was slow and eventful. On January 22, 1927, the x-ray showed bony union and the tibial and fibular fragments at sight of fracture were in one callus, also a small sequestrum in the free fibial fragment. The dead bone was removed. Two sinuses developed and were persistent.

Another x-ray taken on August 31 revealed a small piece of dead bone not previously shown, in the upper tibial fragment. It was removed.

About a year later, that is on July 11, 1928, it became necessary to remove a small sequestrum in the distal fibular fragment.

During the following two months the sinus remaining was once thoroughly curetted. Examination of patient October 27, 1928, I found the sinus healed solidly and remained so to this date, July 20, 1929. Patient discharged and in good condition.

#### SUMMARY

An extremely bad compound comminuted fracture. Part tibial bone missing.

Major part of soft parts severed.

The usual conditions present indicating amputation.

Conservation of entire limb was successful.

No shortening, determined by careful measurements.

Patient walks without limping.

Photographs of patient were taken at time of dismissal of case.

508 Professional building.

#### THE USE OF FORCEPS

JOSEPH L. BAER, M. D.

Attending Gynecologist & Obstetrician, Michael Reese Hospital, Associate Professor of Gynecology & Obstetrics, Rush Medical College.

#### CHICAGO

The progress and termination of labor in an overwhelming percentage of all women is a physiological act which should require no interference. However, every confinement should be conducted with the thought that it is a potential emergency major surgical operation. There is always a small percentage of patients in whom nature's unaided efforts are futile and result in the death of the mother, the child or both. Obstetrics as a specialty arose because of the dire needs of this small group.

The pioneers of previous generations concerned themselves chiefly with the problems of pathological labor, quite content to let the normal progress of labor alone. Beginning with the aseptiq era, the obstetrician became more and more an obstetric surgeon and the practice of obstetrics acquired more and more a surgical trend. This trend quite naturally has permeated the entire medical profession since the leaders of the past fifty years have been the teachers and exemplars of the profession at large in whose care the bulk of obstetrics has and will reside for



many years to come. The result of this surgical tendency has been a misdirected increase in the frequency of operative interference. It is entirely fitting that the general practitioner should hear and read the views of his colleagues who have specialized so that both groups may benefit by an exchange of experiences.

This paper will be limited to an exposition of certain principles in the uses of forceps which



Fig. 1. Introducing the left blade to the left side of the pelvis. (Doderlein).

have justified themselves in my experience. What is the essential purpose of forceps? Obviously, it replaces the propulsive push of the maternal powers, both voluntary and involuntary, by a pulling effect. Whatever the cause, the fetal head is no longer advanced from within but must now be advanced from without. In the absence of direct indications for haste, I believe this traction effect is best accomplished by an exact imitation of the natural progress of labor without the addition of any harmful factors.

The intelligent use of forceps presupposes something more than deftness in their handling. The attending physician must know something of the capacities and limitations of the mother's pelvis. Pelvic measurements may be omitted in a multipara with a satisfactory previous confinement history but are imperative in the unknown quantity, the primipara. Previous knowledge of a contracted inlet or outlet may mean saving the life of the baby and avoiding the mutilation of the mother.

Certain prerequisite conditions must be fulfilled before forceps may be applied. These are:

1. The cervix must be fully dilated.
2. The membranes must be ruptured.
3. The pelvis must not be too contracted.
4. The fetus must present correctly.
5. The head of the fetus must be neither too large nor too small.
6. The head must be engaged.
7. The fetus should be living.

Then there must be a proper indication. An excellent rule in the conduct of a confinement is "non-interference without a suitable indication." Forceps indications generally recognized are:

#### *Maternal*

1. No progress after one hour of vigorous second stage labor with the head on the perineum.
2. Secondary inertia—due to such causes as maternal exhaustion, disproportion because of too large a fetus or too small a pelvis; resistance of the pelvic floor.
3. Miscellaneous maternal pathology—cardiac, pulmonary, toxemic, uterine, i. e., premature

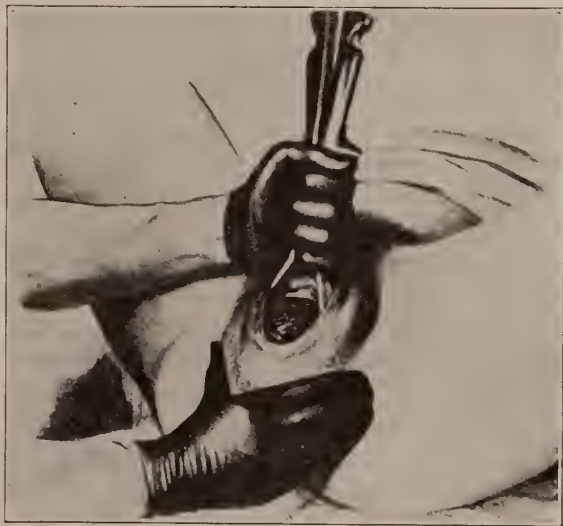


Fig. 2. In the final upward traction on the appearance of the parietes the blades may be removed and the head expressed by a compression grip at the level of the anus—(Modified Ritgen method).

The capillary pulse in the visible scalp serves the author as an index of the condition of the fetal heart.

separation of the placenta, threatened rupture, placenta previa, etc.

#### *Fetal*

Early signs of asphyxia.

An accurate diagnosis of the position of the head is fundamental. More fetal deaths and

maternal morbidities are due to forceps incorrectly applied because of ignorance of the true position of the head, than to any other single factor. Occiput posterior, deep transverse arrest, deflexion and extension attitudes all are amenable to safe delivery when diagnosed but end in disaster when attacked in ignorance of the true diagnosis.

Those of us who practise gynecology and take

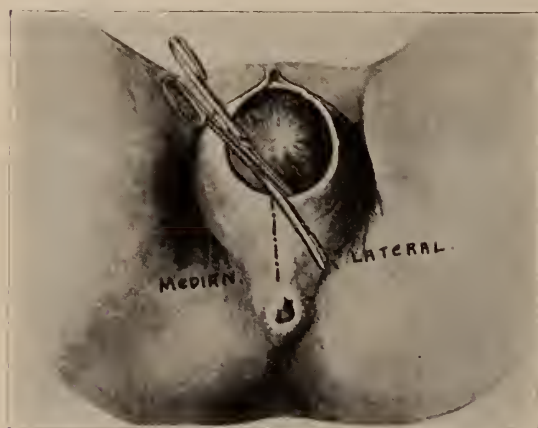


Fig. 3. Dotted lines indicate the direction for the incision of the perineum for lateral and median episiotomy.

pride in the successful repair of third degree tears are indebted for most of these to someone's failure to recognize a persistent occiput posterior which is pulled through rather than over a perineal body. The lacerated cervix with eversion and erosions, chronic endocervicitis, sterility and abortions, and the painful broad ligament scars are too frequently the evil trail left by those who pull the head through a partially dilated cervix.

The choice of the instrument is the next consideration. The usual types of forceps are carefully constructed with appropriate cephalic and pelvic curves made to fit the bulging parietes of the fetal head and to follow the curve of the pelvic axis. Each instrument has its place.

The Naegele forceps with its short narrow shank is ideal for an outlet application. The Simpson is the best instrument for general use in low and mid positions. The Breus and Tarnier compete for the high application, the former providing a degree of flexibility in the grip of the blades because of the joint between blade and shank, the latter a rigid but more injurious hold on the fetal head. The Kielland, originally devised for the high head permits of cephalic application in any position or level of the head and

has achieved great popularity in the continental clinics. There is no pelvic curve and the lock is replaced by a sliding bar arrangement. The Tucker-McLane has solid blades which permit of easy adjustment to the appropriate position on the head but requires exact cephalic application to avoid slipping.

**Technic:** The correct application of the doubly curved blades involves avoidance of injury to the narrow introitus and to the walls of the vagina.

This is accomplished in three ways; the left blade is started with the handle over the right groin held very lightly, the vagina is protected by two fingers inserted posteriorly on the left and the blade is introduced chiefly by its own weight and the pressure of the thumb of the vaginal hand. (Fig. 1.)

Its final position over the parietes is adjusted laterally by the internal fingers which lift it into place. The right blade is introduced and adjusted in like manner.

When correctly applied the blades will lock



Fig. 4. Walcher's Hanging Position. This position enlarges the antero-posterior diameter of the superior strait. (Bumm).

easily, after which the heart tones must be checked lest a loop of cord be caught and a fetus delivered carefully but dead.

The heart tones should be controlled constantly but when any portion of the scalp becomes visible, (Fig. 2) I find the capillary circulation in the scalp a very useful index of the presence and quality of the fetal circulation. Intermittent finger pressure with the consequent blanching and more or less rapid return of color affords a very reliable criterion of the condition



of the fetal heart. This sign as far as I am aware has not been described.

Trial traction having certified to the firmness of the grip of the blades, extraction is now undertaken.

From this step onward nature is the guide. Each pull is an attempt to imitate the effect of a contraction both in intensity and duration. The direction of the pull, that is, posterior, horizontal or lifting toward the vertical, is determined by the direction of the axis of that portion of the pelvis in which the head is resting.

The shanks are grasped, rather than the handles, to avoid any chance of compression of the fetal head and the rest periods are twice as long as the periods of traction.

Thus the head is brought into the vulvar outlet in imitation of the working of the maternal powers.

The anal sphincter gapes and the perineum is bulging.

At this time and not before, episiotomy is considered, a median incision for long perineums and medio lateral for short perineums. (Fig. 3.)

The final delivery of the head may be completed with the forcep or preferably in my opinion by removal of the forcep and extrusion of the head by a compression grip of the perineum opposite or posterior to the anus, the pressure thus being applied beneath the fetal malar eminences and remote from the eye sockets. (Fig. 2.)

Ordinarily, gentle horizontal traction on the bony prominences of the head, chin and occiput, or mastoids and jaw angles, suffices to produce shoulder rotation and delivery of the anterior shoulder, after which a more vertical pull lifts the posterior shoulder over the perineum when the body can be extracted by a shoulder grip.

If a hand is visible that arm should be delivered before bringing the shoulders through the vulvar outlet.

When the pull on the neck seems at all severe, it should be avoided and the shoulders rotated and extruded by pressure on the fundus of the uterus. Haste is rarely indicated. Deliberateness permits control of asepsis and the safeguarding of fetus and mother from unnecessary injury.

Certain special situations warrant a word. If the head is at the inlet and forceps must be applied, remember to enlarge the antero-posterior

diameter of the inlet by dropping the thighs in hyperextension; "Walchers position." (Fig. 4.)

Scanzoni forceps rotation of an occiput posterior should be considered only if the head is loose in the vagina—a tight fit is much better handled by manual rotation but neither should be attempted until the head is in the true pelvis.

Forceps on the after-coming head in breech extractions should not be necessary and fetal injury usually can be avoided by exerting 90% of the propelling force from above, just over the symphysis.

The chief purpose of this paper has been to emphasize that when forceps extraction is indicated and a correct diagnosis has been made, the closest imitation of nature's technic is the best technic to follow. By so doing, both mother and fetus will receive the maximum benefit and sustain the minimum injury.

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#### DEATH OF A DAUGHTER OF CHARLES DICKENS

Mrs. Kate Perugini, daughter of Charles Dickens, died recently in London. She was born in 1839 and was the third child and second daughter in a family of ten. One son, Henry Fielding Dickens, born in 1849, still holds the office of sergeant at law for the city of London.

The children of Charles Dickens' body are disappearing but his brain children know no death. Florence Dombey, Little Nell, Little Dorrit and Jenny Wren, the doll's dressmaker, live today immortal. Paul Dombey is still listening to what the waves say, Oliver Twist lives yet in the dark purlieu of London's slums, and Joe the waif is being made to "move on" unendingly by the police. And his girls can be seen everywhere: frivolous Dolly Varden, demure Ruth Pinch, faithful Agnes, laughing Kate Nickleby, willful Bella Wilfer and coquettish Arabella Winkle are here living and loved forever.

Dickens himself seems remote, a dweller in a different age. It is with a start that one receives this reminder that the great novelist is only a generation's remove from the present.

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#### PHONEY-GRAPHS

"Dear Mestor Hines: I got your letter about what I owe you. Now be pachtent. I ain't forgot you. Pleez wait. When some fools pay me I pay you. If this was judgment day and you was no more prepared to meet your Master as I am to meet your account, you sure would have to go to hell.

"Trusting you will do this, I am yours truly."—A delinquent subscriber's letter to the *Benkelman Post*.—*West. Hos. & Nurses Review*.

## Society Proceedings

### ADAMS COUNTY

The annual all-day fall meeting of the Adams County Medical Society was conducted by members of the faculties of the University of Pennsylvania School of Medicine and the Graduate School of Medicine of the University of Pennsylvania, October 14, 1929.

There was a breakfast for our distinguished visitors given at the Hotel Quincy, at which 25 were present. The scientific meeting was called to order at the Elks' Club about 9:25 a. m. by the president, Dr. J. W. E. Bitter. At the morning meeting there were addresses as follows: Dr. William Bates, "Differential Diagnosis—Abdominal Parietal and Visceral Disease"; Dr. R. H. Ivy, "Fractures of the Jaw"; Dr. T. Turner Thomas, "Fractures and Dislocations."

At noon the Adams County Medical Society and their guests, joined with the Quincy Rotary, Kiwanis, Lions and Exchange Clubs for luncheon at the Elks. There were nearly 300 present. The meeting was turned over to the secretary who after a few brief remarks introduced Drs. L. H. Nickerson, A. H. Bitter and M. E. Bitter, all graduates of the University of Pennsylvania. The secretary then turned the meeting over to the president of the Society, Dr. J. W. E. Bitter, who introduced the two speakers. Dr. Ravdin gave a talk on "Medical Biology" with a special plea for vivisection. Dr. Eliason gave a talk on the "Significance of Pain in the Abdomen."

At 2:15 the scientific meeting was resumed and there were papers by the following: Dr. I. S. Ravdin, "Surgical Aspects of Gall-Bladder Physiology"; Dr. E. B. Piper, "Breach Presentations"; Dr. E. L. Eliason, "Duodenal Ulcer." The program was concluded about 4:45 p. m.

At 6:45 there were 150 persons assembled for the banquet given in the Quincy Country Club. Dr. C. D. Center presided as toastmaster. He called on all of the University of Pennsylvania guests for remarks. This was followed by a lantern slide and motion picture demonstration on "Bronchoscopy," by Dr. Gabriel Tucker. Then a paper and motion picture demonstration of "Massive Atelectasis," was given by Dr. W. Estell Lee. Following this, the toastmaster called on the secretary of the Illinois State Medical Society, Dr. Harold Camp, for a few remarks. The meeting adjourned about 10:15 p. m.

The total attendance for the day was at least 225.

HAROLD SWANBERG, *Secretary*.

### BOND COUNTY

Physicians and surgeons from Fayette, Clinton, Madison and Montgomery counties were guests of the Bond County Medical Society at a dinner at the Thomas Hotel, October 11, at which time those present listened to two splendid addresses by Dr. C. H. Shutt and Dr. Sinclair Luton of St. Louis, as well as short talks from doctors representing the four counties mentioned.

Following a splendid dinner the medics enjoyed a

30-minute social hour at which Dr. Cleveland H. Shutt, president of the St. Louis Medical Society, addressed the doctors on "Gall Bladder Troubles." Round table discussion followed the address of Dr. Shutt. Dr. B. F. Lischer of Mascoutah, who was to give a pen picture of the country doctor, was unable to be present. Dr. Luton, who is an instructor at Washington University Medical School, talked on "Common Disorders of the Heart," and a discussion also followed his address. Both addresses were very interesting and much enjoyed by those present.

Short talks were also made by Dr. A. R. Whitefort of Fayette County, Dr. J. J. Moroney of Clinton County, Dr. Ewald Hermann of Madison County, and Dr. A. S. Needles of Montgomery County.

WM. T. EASLEY, *Secretary*.

### IROQUOIS COUNTY

The Iroquois County Medical Society met in regular session at the Nurses Home, Watseka, at eight o'clock Sept. 19. Vice-President Hedges presided.

The secretary read a communication from Dr. S. E. Munson, our district councilor, inviting us to meet with the Ford County Society and arrange a program for a meeting at Paxton, October 10 at which Dr. Fredrickson, our state society president, would be present. Dr. Harry M. Hedge of Chicago was then introduced and gave a very interesting talk, illustrated with lantern slides, on "Common Diseases of the Skin." Many questions were asked and a lively interest was manifested by the members present. A rising vote of thanks was tendered Dr. Hedge for coming down and giving us his time and profitable lecture.

Meeting adjourned at 10:20 after which a delightful lunch was served in the dining room by the hospital superintendent.

C. H. DOWSETT, *Secretary*.

### OGLE COUNTY

The Ogle County Medical Society met at 6:30 p. m. on September 26, 1929, at the Rock River Gold Club, Oregon, Illinois. Before dinner there was a brief business meeting with election of officers as follows: President, J. M. Beveridge; vice-president, C. H. Schaller; secretary-treasurer, L. Warmolts; delegate, W. E. Kittler; alternate delegate, A. B. Bogue; censor, F. G. Andreen.

Dr. Beveridge presented a pen and ink drawing, rendered by his son of a crest that could be used to adorn the Society's stationery. It met general approval and it was decided that a plate be made.

The scientific program followed with talks on Hyperthyroidism by Dr. Edwin P. Sloan from Bloomington, and Cesarean Section by Dr. Maurice Rogers from Rockford. Both the papers were of considerable interest and brought an animated discussion.

The meeting adjourned to meet again at Byron, Illinois, some time in November.

L. WARMOLTS, *Secy.-Treas.*



### STEPHENSON COUNTY

The fall district meeting of the Stephenson County Medical Society was held at the Freeport Country Club, Oct. 4, with a luncheon at noon and the meeting followed. The following men presented papers:

Donald C. Balfour, Mayo Clinic, "Ulcers of the Stomach and Duodenum."

Chas. F. Read, Loyola University, Chicago, "Diagnosis in Neuro-Psychiatry."

Ellsworth Smith, Washington University, St. Louis, "Relationship of Hypertension to Renal Disease."

A. A. Strause, Chicago, "Ulcers of the Stomach."

### TRI-COUNTY MEDICAL SOCIETY

The annual meeting of the Tri-County Medical Society, consisting of Henry, Knox and Warren County Medical Societies, was held at the Elks Club, Kewanee, on Thursday, October 10, 1929.

The meeting began at 4:00 p. m. and the first speaker on the program was Dr. George H. Coleman, Assistant Clinical Professor of Medicine, Rush Medical College, Chicago, who selected as his subject "The Blood Picture in Health and Disease." Dr. Coleman gave a very interesting talk on this subject, reviewing the work of many recent investigators, and then gave the clinical significance of various blood findings in disease conditions. The subject was discussed by Dr. C. P. White of Kewanee, Dr. George Parker and Leslie Rutherford of Peoria.

The next speaker was Dr. Bayard Holmes, Professor of Medicine, Chicago Medical School, Chicago, who talked on "Tumors of the Mediastinum." Dr. Holmes gave a very practical talk on this highly interesting subject, reporting several cases under his care recently, and showed roentgenograms of these cases. Several present discussed this talk, the discussion being opened by Dr. Roswell T. Pettit of Ottawa, who also had several interesting pictures of cases of this nature.

An appetizing fried chicken dinner was enjoyed by all present at 6:00 p. m., and immediately after the dinner, Dr. J. E. Westerlund, who officiated as toastmaster, introduced the mayor of Kewanee, Hon. James W. Andrews, who gave an address of welcome, and the response was given for the Tri-County Society by Dr. Harold M. Camp of Monmouth. Vocal solos were given by Miss Myrtle Nelson accompanied by Dagny Johnson on the piano.

The President-elect of the Illinois State Medical Society, Wm. D. Chapman of Silvis, was present and was introduced, making a short but snappy talk.

A monologue was given by Ross Harvey, Davenport, Iowa, which was greatly enjoyed by all present, although a few "slams" were taken at some of the physicians in a friendly way.

The evening portion of the scientific program consisted in the showing of the Canti Cancer Films, under the supervision of Dr. Gilbert FitzPatrick of Chicago. Dr. FitzPatrick prefaced the showing of the films by

a talk on the methods used in the making of these unusual films, and told of the various contents of the next reel, while they were changed. This was one of the most interesting numbers ever shown at a meeting of the Tri-County Society.

Although the weather was unfavorable, the general attendance was about one hundred fifty, among the cities represented being Peoria, Rock Island, Moline, Galesburg, Monmouth, Macomb, Rushville, Augusta, Ipava, Princeton, Ottawa, Wyanet, Good Hope, Bushnell, Aledo, Geneseo, Orion, Galva, Cambridge, Altona, Silvis and Kewanee.

The Tri-County Society will hold its 1930 annual meeting in Galesburg, and a general invitation is extended to all physicians in Western Illinois, Eastern Iowa, and any other points, to come and see a live society.

P. J. McDERMOTT, *Secretary*,  
Henry County Medical Society.

Kewanee, Illinois.

### Marriages

CLAIR EUGENE CARR, Chicago, to Miss Alta Blanch Davidson of Lawrence, Kan., at Evanston, Ill., September 14.

HOMER J. ELKINS, Mounds, Ill., to Miss Ruth Dwyer Steuver of Indianapolis, September 2.

VIRGIL MARTHA GILCHRIST, Urbana, Ill., to Mr. Portius M. Wheeler of Monticello, September 7.

LEON W. KELSO, Paxton, Ill., to Mrs. Harriet Edwards of Carlinville, September 7.

CALVIN ALBERT LAUER, Danville, Ill., to Miss Evelyn Alice Johnson of Minneapolis, August 12.

EUGENE YOUNG, Champaign, Ill., to Miss Madge Myers of Mansfield, August 31.

### Personals

Dr. Worling R. Young, Geneseo, has accepted a position at Madison, Wis., in the health department of the state university.

The Rock Island County Medical Society was addressed, October 8, by Dr. Aaron Arkin, Chicago, on gastro-intestinal diseases.

Dr. Alexander L. Darche has accepted the po-

sition of assistant physician at the Wyoming State Hospital, Evanston, Wyo.

Dr. Phillip S. Waters, Alton, has been appointed managing officer of the Lincoln State School and Colony to succeed Dr. Christian H. Diehl, resigned.

Dr. Henry L. Davis, Rockford, was elected surgeon general of the United Spanish-American War Veterans at the recent national convention in Denver.

The St. Clair County Medical Society was addressed, October 3, by Dr. Joseph F. Bredeck, St. Louis on "Clinical Application of the Shilling Blood Count."

The Winnebago County Medical Society, Rockford, was addressed, October 8, by Dr. LeRoy H. Sloan, Chicago, on "Fundamental Principles in Neurologic Diagnosis."

Dr. William D. McNally addressed the National Association of Coroners at Milwaukee, October 1, on "Diagnosis and Treatment of Gas Asphyxiation in Homes."

Dr. Jacobo Fajardo of the Philippine Islands health department, who is traveling in the United States under the auspices of the Rockefeller Foundation, visited medical institutions in Chicago last month.

Dr. Willis C. Campbell, professor of orthopedic surgery, University of Tennessee College of Medicine, Memphis, addressed the Chicago Society of Industrial Medicine and Surgery, October 2, at the Medical and Dental Arts Club on "Low Back Pain."

Dr. William C. Woodward, director, Bureau of Legal Medicine and Legislation of the American Medical Association, addressed the fifty-second annual meeting of the American Bar Association, Memphis, October 22, on "The Office of Coroner in the United States: Its Proposed Abolition."

The Chicago Council of Medical Women was addressed, November 1, at the Medical and Dental Arts Club by Drs. Anna R. Lapham on "Treatment of Pelvic Dystocias," and Florence E. W. Hark on "Treatment of Rachitic Pelvis."

Col. Fielding H. Garrison, U. S. Army Medical Corps, author of the widely known book "An Introduction to the History of Medicine," addressed a joint meeting of the Chicago Surg-

ical Society, the Institute of Medicine and the Society of Medical History at the City Club, October 4.

Dr. Harry B. Levey is reported to have been appointed director of the child guidance clinic recently established by Tulane University of Louisiana School of Medicine, New Orleans. Dr. Levey has since 1926 been connected with the Institute for Juvenile research, Chicago. He is a graduate of Rush Medical College and a former Cook County Hospital intern.

Dr. Richard C. Cabot, Cambridge, Mass., the guest of honor at a dinner given by the Illinois District of the American Association of Hospital Social Workers at the Midland Club, October 11, spoke on "The Value of Medical Social Service to the Hospital and the Community."

Dr. N. S. Davis III spoke on "Hypertension, the Decompensated Heart, and Treatment of Pneumonia" before the post-graduate conference of the Michigan State Medical Society at Benton Harbor on October 16, 1929.

Dr. Henry H. Bishop, Cadiz, Ky., has been appointed health officer of the city of Bloomington, effective October 1, to succeed Dr. George D. Heath, Jr., who resigned several months ago. Before he was health officer of Trigg County, Kentucky, Dr. Bishop was for several years in general practice.

Dr. Walter C. Bisson has been appointed postmaster of Charleston, Ill. Dr. Bisson served with the one hundred and thirty-first infantry of the thirty-third division in France and took part in the Meuse-Argonne campaign and the Somme campaign.

The Chicago Medical Society will give a series of public lectures on the second Wednesday in each month except January, when the lecture will be on the third Wednesday. The public lecture, October 9, at the Medical and Dental Arts Clubs by Paul H. Douglas, Ph.D., professor of industrial relations at the University of Chicago, on "Some Economic Problems of the Medical Profession as Seen by an Economist."

Dr. Fred L. Adair, professor of gynecology and obstetrics, University of Minnesota Medical School, Minneapolis, has accepted the chair of gynecology and obstetrics at the University of Chicago Medical School. Previous to his de-



parture from Minnesota. Dr. Adair was guest of honor at a number of dinners given by his associates. He is a graduate of Rush Medical College, has done graduate work in Europe, was in general practice for several years before specializing and since 1905 has been on the faculty of the University of Minnesota. He served in the World War, is a past president of the Hennepin County Medical Society, is secretary of the Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association, and the author of many articles in medical journals concerning his specialty. His appointment marks the opening of this department at the south side school.

Dr. Louis Radcliffe Grote, head physician of the von Noorden Clinic in Frankfort-am-Main, Germany, on invitation of various medical organizations, is visiting this country, where he will discuss the latest findings of the clinic on diabetes and other disorders of metabolism.

Dr. Thos. W. Bath, of Reno, Nevada, formerly of Bloomington, Ill., has been appointed surgeon general with rank of colonel on the staff of Governor Balzar of Nevada.

Mrs. O. F. Wilson of Waynesville, Ill., writes that the late Dr. Wilson was in active practice there until February of this year. He retired at that time on account of ill health, leaving a good opening for a physician. Inquiries about the prospects for practice in that district may be directed to Mrs. Wilson.

Dr. Alton S. Pope, epidemiologist and chief of the bureau of communicable diseases in the Chicago Department of Health since December, 1926, has resigned to become epidemiologist on tuberculosis for the Massachusetts state department of health and will also join the faculty of the school of public health in Boston.

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### News Notes

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—The Chicago Medical Society was addressed, October 23, by Dr. Abraham Levinson on hemorrhage of the new-born and Dr. Edward H. Ochsner on fractures of the hip.

—The educational committee of the Chicago Medical Society in five days in September received twenty requests from principals of high

schools for physicians to talk before student assemblies.

—St. Elizabeth's Hospital on North Claremont Avenue has undertaken the construction of an eleven story addition and later will add to it two wings.

—The women physicians of Chicago gave a banquet to visiting fellows of the American College of Surgeons at the Chicago Women's Club, October 16, following a reception.

—Twenty new cases of smallpox were reported in Rock Island. September 30, eleven of which were among pupils in the Eugene Fields School. The total number of cases then was said to be thirty.

—The Chicago Ophthalmological Society and the Chicago Laryngological and Otological Society gave a dinner to the visiting members of the American College of Surgeons, October 16, at the Stevens Hotel.

—The Institute of Medicine of Chicago and the Society of Internal Medicine of Chicago were addressed, October 25, at the City Club by Dr. Walter B. Cannon, George Higginson, professor of physiology, Harvard University Medical School, on "Function of the Sympathetic System in Maintaining the Stability of the Organism."

—At the Illinois Conference on Public Welfare, Evanston, October 28-31, among others, Dr. Lewis J. Pollock, professor of neurology, Northwestern University Medical School, spoke on "Psychiatric Factors in Convalescence," and Michael Davis, Ph.D., of the Julius Rosenwald Foundation on "Health and Social Work."

—The Illinois Conference of Health Officers met jointly with the Illinois Municipal League at Springfield, October 17-18. Among others, Dr. John D. Nichols, director of health at Mooseheart, spoke on "Ten Years' Experience With Toxin-Antitoxin"; Thomas G. Hull, Ph.D., of the state health department on "Undulant Fever," and Dr. Andy Hall, the state health commissioner, on "The State Health Program."

—An organization, known as the American Association of Obstetricians, Gynecologists and Abdominal Surgeons Foundation, has been formed for the study of maternal mortality and methods of reduction. It will work through

women's clubs, health groups and parent-teacher organizations and will also urge upon medical schools the more adequate teaching of obstetrics.

—The Illinois Tuberculosis and Public Health Association held a one day meeting at Joliet on Tuesday, October 29.

Drs. F. O. Frederickson, Dr. M. L. Harris, Carroll Eugene Cook, R. H. Hayes and C. A. Hedblom of Chicago took part in the program.

—The Chicago Medical Society and the Chicago Urological Society held a joint memorial meeting, October 24, for the late Dr. William T. Belfield, at which the first annual William T. Belfield lecture was delivered by Dr. Gustav Kolischer. This lecture had been planned by the urological society before Dr. Belfield's last illness and it had been hoped that he would be able to attend the first lecture.

—So many foci of malaria have developed in the central counties of Illinois in the last few months that a greater prevalence may be expected next year, the state health department says, unless control measures are adopted. Madison County reported fifteen cases; Macon, eight, and Sangamon, four; and twelve other counties in the central part of the state reported nineteen cases, making a wide area in which the mosquitos have become infected. It is said that the contact with the South by automobile has provided ample opportunity to bring the disease back into Illinois. This state has been singularly free from malaria for some time, but the disease once was a veritable plague.

—The Fifty-second Annual Meeting and Dinner of the Chicago Gynecological Society in conjunction with the Chicago Medical Society in honor of Dr. Charles B. Reed was held at the Medical and Dental Arts Club, October 11, 1929.

Following the annual election of officers, the following speakers took part in the program: Drs. W. A. Evans, James H. Hutton, Irving S. Cutter, Pliny R. Blodgett and Mr. Payson S. Wild.

## Deaths

WILLIAM THOMAS BELFIELD, Chicago; Rush Medical College, Chicago, 1877; a Fellow, A. M. A.; chairman of the Section on Genito-Urinary Diseases of the American Medical Association, 1911-1912; emeritus professor of genito-urinary surgery at his alma mater;

past president of the Chicago Medical Society, the Chicago Institute of Medicine, the American Association of Genito-Urinary Surgeons, the Chicago Urological Society and the American Urological Association; member of the American College of Surgeons; on the staffs of the Henrotin, Presbyterian and Cook County hospitals; pioneer in suprapubic prostatectomy; originated the treatment of seminal vesicle infections and radiography of the vesicle by way of the vas deferens; for many years a medical leader in the Middle West; aged 73; died, October 4, of acute dilatation of the heart and chronic myocarditis.

CHARLES CLIFFORD BELL, Bushnell, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1898; died from accidental injuries on the Burlington Railroad track at Avon, September 26.

JOHN WILLIAM BOWLING, Shawneetown, Ill.; College of Physicians and Surgeons, 1877; a Fellow, A. M. A.; president of the Gallatin County Medical Society; aged 67; died, September 13, of tuberculosis.

HENRY JAMES CALDWELL, Wyanet, Ill.; Trinity Medical College, Toronto, Ont., Canada, 1885; aged 73; died, September 19, of myocarditis.

JAMES WELCH GUEST, Chicago; Bellevue Hospital Medical College, New York, 1888; a Fellow, A. M. A.; aged 61; died, September 1, of toxemia and debility due to Hodgkin's disease.

MATLOCK V. GUNN, Bloomington, Ill.; Medical College of Ohio, 1885; a practitioner for many years in El Paso and Bloomington; aged 69; died, October 1, following an operation in University of Pennsylvania hospital in Philadelphia.

WILLIAM F. HOLMES, Stewardson, Ill.; Rush Medical College, 1897; a practitioner in Stewardson over 25 years and founder of the hospital there, aged 62; died, September 26, after a long illness.

HERO KRUSE, Peoria, Ill.; Universität Heidelberg Medizinische Fakultät (Badische Ruprecht-Karls Universität) Heidelberg, Baden, 1866; aged 87; died, September 24, of heart disease.

ORVILLE W. MACKELLAR, Chicago; Iowa State University, College of Medicine, 1887; a member of surgical staff of Cook County hospital for nine years; at times also on staff of Mary Thompson, Jackson Park and Washington Park hospitals; a Fellow, A. M. A.; aged 65; died in Kingsville, Tex., while on an automobile trip through that state.

WILLIAM SCHOENNESHOFER, Streator, Ill.; Rush Medical College, 1888; a Fellow, A. M. A.; a practitioner in Lostant and Streator for many years; served in the World War as Captain M. C.; aged 61; died, September 28, of myocarditis, nephritis and arteriosclerosis.

JOHN CHARLES STAMM, Chicago; Rush Medical College, Chicago, 1889; a Fellow, A. M. A.; aged 60; died, September 2, at St. Joseph's Hospital, of angina pectoris.



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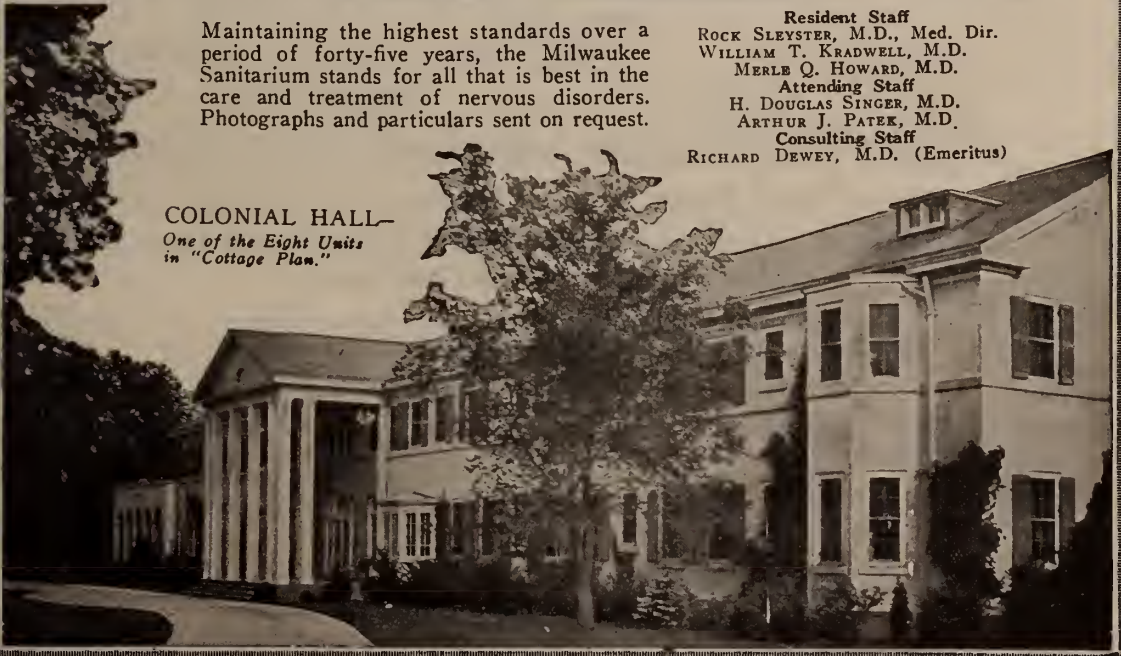
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## Editorials

### NOT ONE PRACTICING PHYSICIAN INVITED

THE PRESIDENT AND HIS COMMITTEES CONSIDER THEMSELVES ABLE TO PLAN FOR THE HEALTH AND PROTECTION OF AMERICAN CHILDREN WITHOUT THE INTERFERENCE OF DOCTORS

An interesting exhibition of the laity's delusions of grandeur in point of medical knowledge was displayed when President Hoover's committee was announced for work on the question of the health and protection of children. Only those medical men were included whom it would have been a direct cabinet and political insult to omit. Neither the American Pediatric Society nor the American Medical Association were asked to co-operate. Significant, however, is it that the list includes the editor of a "woman's magazine" that made one of its greatest circulation drives by a campaign for "better babies," and the President of the American Federation of Labor, as well as a mining engineer and a member of the committee for improving the condition of the poor.

The President's committee for the determination of the facts "as to the present progress and future need for the health and protection of children" met on July 29 at Washington, D. C. The President announced that "a series of committees will be appointed from the *leaders in national organizations*." Medical organizations evidently do not count with Mr. Hoover.

Just what may be expected doctors will not have a hard time in guessing.

As stated in the October number of the *Bulletin* of the St. Clair County Medical Society:

"By the President's committee the subjects to be studied embrace regular medical examinations, school or public clinic for children, hospitalization, adequate milk supplies, community

nurses, maternity instruction and nurses, teaching of health in the schools, facilities for playgrounds and recreation, dependent children, child labor and scores of allied subjects. A sum of \$500,000.00 from private sources has been placed at the disposal of the President to cover the expenses of the preliminary committees, the conference and the follow-up work which will be required to carry out its conclusions. The work of the conference will be under the direction of the secretary of the interior, Dr. Ray Lyman Wilbur, with the cooperation of the secretary of labor, James J. Davis. The members of the committee comprise a chemist, a commissioner of food and drug inspection, a mining engineer, an executive secretary, the director of the Children's Bureau at Washington, a member of the National Amateur Athletic Association, a member of the Association for improving the condition of the poor, a judge, a superintendent of schools, the Director of the American Child Health Association, the surgeon general of the Metropolitan Life Insurance Company, the president of the American Federation of Labor, the editor of the *Woman's Home Companion*, a staff member of the *Herald Tribune* of New York, a member of the department of child welfare of World's W. C. T. U., a social economist, a member of the National Health Council of New York, a member of the Bureau of Home Economics of the Department of Agriculture, a former congressman from Virginia, a past president of the American Pediatric Society, a state health commissioner and two private citizens not listed as affiliated with prominent national organizations. In all the committee comprises sixteen men and eight women.

"It is surprising that President Hoover has not shown more recognition of any organized medical group in his choices."

#### THE PRECEPTOR SYSTEM FOR MEDICAL STUDENTS—MASS EDUCATION IN MEDICINE INVOLVES A CONTRADICTION IN TERMS

Advantages of a preceptor for the student doctor are of value incalculable. After all, visual education must complement theoretical expositions. California, Wisconsin, Michigan and Harvard University are trying to blaze the way

in experimenting with the preceptor system for medical undergraduates.

Such an applied and direct science as medicine dare not train its men by books alone and hope for a maximum result of efficiency. Skill of eye, hand, mind, and intuition are essential complements of character and integrity.

Experienced practitioners regard with pleased interest that verges almost upon enthusiasm those various experiments throughout the country, of what promises to be a resumption of the preceptor system.

At intervals since 1923 there has been a decided tendency towards reviving the preceptorial or apprentice system of medical students. Prior to the time when colleges and universities of medicine and of the healing arts had attained their present high standard it was the custom for a youth with his mind on medicine bent to be practically apprenticed or "bound out" to general practitioners who taught these tyros the "Art as well as the science of medicine," or more scientifically phrased, the psychology of dealing with people as well as skill with physics and physiqes.

Such training, of course, should not supplant clinic and classroom medical instruction but beyond a doubt it is a necessary and vital supplemental unit. Know what is in a man's mind and you are well set to know how to treat his body.

Practical experiments along this line are now in process of evolution and application at the Schools of Medicine of the Universities of California, Wisconsin and Michigan and Harvard University. Much is expected from this rejuvenation of the field training system and its correlation with the accepted curriculum of medical schools of high standards. By its use expectation is felt that medical students will gain in training a fuller realization of the responsibilities of a physician who will succeed in practice. Often there is far more medical education to be gained from one patient handled with a full sense of responsibility than in a dozen patients in which the responsibility is shared with another. There are few inspirations as great for a medical student as for him to come into direct and actual contact with the ordinary life of a practicing physician. In this contact is con-



tained that thrill of anticipatory experience that is the light that lessens the load of the drudgery of training. Coupled with modern efficiency in medical schools and universities, even higher standards of medical practice may be expected from this revival of a method of instruction from which was produced that wonderful type of "family physician" so highly qualified, so greatly admired and at present so nearly extinct.

One of the greatest advantages accruing from this apprentice system lies in the practical psychology harvested. In this practical psychology lies the secret of the success of the quack and charlatan. At the outset the quack learns how to handle people. Technique instead of technical knowledge is the *sine qua non* among the assets of the charlatan. While some medical students are born psychologists and know how to approach persons instinctively, still others who acquire the science of medicine with a thoroughness akin almost to genius, seem never to learn how to make a happy approach to a patient. The reason for this is that this angle of medical practice has never been taught with precision and actual definitude. It is practically out-school laboratory work that has been overlooked when the curriculum has been made up. The "art" of medicine has been neglected usually when the medical school sends forth its tyro. He is armed with his diploma, his knowledge and his license to practice medicine but he does not know how to handle the sick and ailing so that these hapless ones will realize that the physician's ministrations are needed. It is much the same as having explained to a man all about how an automobile is made, and how to handle the car's brakes and levers without ever actually letting him sit in a car to drive a machine. Such a man who started out to be a chauffeur would have a pretty hard time before he became a really efficient driver, even if he were the finest mechanic in the world.

Dr. W. J. Kerr, head of the medical school of the University of California, decided to make a practical demonstration of the method of preceptorship. Four senior students were selected. Three were assigned to general practitioners. The fourth was sent to a small country hospital. Subsequent reports of these students were rich in result. One student spent a month in the

office of a physician keenly interested in civic affairs. The awakening of the student to what some of the practicalities of such work means is outlined in these excerpts from his report:

One can see that a general practitioner is a busy man. Not only were professional duties attended to, but also municipal duties along public health lines. There were also the noon luncheon clubs to attend and committee meetings of all kinds.

Dr. Chain, being health officer of the city of Eureka, made calls on smallpox, and other patients with "reportable" diseases. I also saw the inner workings of a city health laboratory. Every day the city water was tested for colon bacillus, and once a month the milk supply was given a bacteria count. The routine diphtheria cultures were run through every day, and many other examinations of specimens of all kinds made.

I also saw the indifference of the average doctor to public health matters. Some even resent interference with their work, even in the enforcement of quarantine.

The Tuberculosis School was another source of interest and profit to me. In this school they teach the persons who are infected how to live and how to prevent the spread of the disease, as well as help them on the road to recovery. Contacts are taken in and taught the food to eat, the precautions to take, and the routine life they must live in order that the disease will not take a firm root in their bodies.

To do effective public health work in the small town is not conducive to popularity. The quarantine of a diseased case may gain the enmity of the doctor and the family. The killing of a pet poodle with rabies may incur the enmity of a certain faction in the community. The destruction of a herd of tuberculous cattle brings a decided reaction from the farmers. The life of the public health doctor is a bitter struggle, where enemies are made and very little praise received. One must have the courage of his convictions and have the good of his profession and the welfare of the community at heart.

*These small-town doctors possess that wonderful something that one acquires in mastering the art of medicine.* They do not have patients who are seen in the ward or office and then forgotten. All of their patients are their friends. The doctor is vitally interested in them and they have absolute confidence in him. It is an inspiration to see the faith that these people have. They are a simple people, and demand simplicity in return. All the doctors possess that spark of sympathy that kindles in every person a feeling of faith and hope. One realizes that ours is a noble profession and demands high ideals. You are the priest as well as the doctor, and in many of the cases a bit of kind advice goes much further than tons of C. C. pills.

The picture must not be painted too brilliantly. Unfortunately, one must live. One must have money. There are men in the profession who so devotedly

worship at this shrine that they lose their higher ideals. This is often the cause of bitter jealousies and of unprofessional practices. The cream of the jest is that this is merely Life. In the lecture hall and classroom we do not realize that outside of the college there is a bitter fight for the preservation of life and the very detail of living.

"The preceptor system in medicine is based upon the idea that medicine is an art as well as a science," states the *Bulletin* of the Association of American Medical Colleges. "The physician must not only know, he must *know how*, and knowing how involves a knowledge of the conditions in which the physician must practice."

A recent issue of the *New England Journal of Medicine* says:

The first aim of the medical school is to train practitioners of medicine, and general practice is the field calling for the largest number of workmen. It is also the field that is changing most rapidly and one in which success calls for the greatest versatility. Working with a successful physician day after day in his practice is an invaluable experience for the young doctor.

What may be regarded as the newer system of medical education makes no provision for supplying this introduction. But there is a need and efforts to meet the need are apparent in the development of "extra-mural" instruction, in various schools.

The "extra-mural" quality lies in the fact that the teacher is a man in general practice, generally remote from the medical school. Such a teacher is commonly spoken of as a preceptor and this introduces an idea somewhat foreign to medical education and important in its consequences. It is the idea of individual instruction, of which a beginning has been made at the Harvard Medical School, though there it is "intra-mural." This training emphasizes the fact that the student learns certain things best from a teacher, true of every art, and recognizes the proper relative value of informal and formal teaching. Mass education in medicine involves a contradiction in terms.

Just how this change is to be made in the system of medical education will be determined by the circumstances in which each school is placed. In California a few students in their fourth year are sent out to selected alumni of the School. In Wisconsin, advantage is taken of the clinical centers developed in "group practice," so rapidly growing in certain parts of the country.

The *Boston Medical and Surgical Journal* says in part:

"At Wisconsin University, from one to three students at a time were apprenticed experimentally to a clinic situated in one of the smaller cities of the State. Now, it is planned to have each student spend six months in extra-mural study, that time being divided between two clinics. At the University of California this system has been under trial for three years. The first year four students were selected; the second

and third years, eight; this year, ten will be so placed. The plan followed at California differs somewhat from that followed at Wisconsin. At the former school, the students are placed for one or two months with a carefully selected preceptor who is a general practitioner in a community of from 3000 to 5000 inhabitants.

"At Michigan, two months of the summer vacation were utilized for this purpose, the experiment being made only by students who volunteered to spend a part of their vacation in this way. Dean Cabot said that letters from all the physicians who had had students were uniformly satisfactory. The students, on their part, showed evidence of being both stimulated and benefited. One student, a man somewhat below the middle of his class in scholastic standing, wrote his preceptor as follows: 'Just a line to express my appreciation of the best two months I have ever experienced in the field of medicine from the student point of view; in fact, my respect for the practice of medicine has increased 500 per cent. since last June, all of which is due to my association with you.'

"Is this innovation in medical education going to prove of value, or is it an ephemeral attempt to correct a faulty tendency in medical instruction? We can hardly visualize such an experiment in our Eastern schools. The greater number of charitable hospitals in the East, with their huge out-patient departments, offer unlimited material for the teaching of practical medicine. We doubt if the faculty of an Eastern school would take the pains to hunt up suitable preceptors in the smaller towns and groom them for their jobs. We doubt if the busy general practitioner of Middleboro or North Adams would have the time or the inclination to coöperate with the faculty of Harvard, Tufts or Yale for the sake of showing a medical undergraduate the intricacies of his daily routine.

"Advantages of such a plan are obvious, provided the preceptor is well trained and conscientious. As Dean Bardeen of Wisconsin says, even the occasional preceptor who illustrates how *not* to practice medicine teaches a lesson. The association of the man in practice with a student fresh from the lecture room and the laboratory should prove to be a stimulation and a pleasure to both."

This New England comment is far less antagonistic than on the face of things it appears to be. The states of the Pilgrim Fathers are always fine adherents of the poetical admonition,

"Be not the first by whom the new is tried;

Nor yet the last to lay the old aside."

In this instance, however, the preceptor system is merely a reversion to a system of medical education that was young when the science itself was in its youth. Not everything old is in error or to be despised as the civilized world daily re-discovers.



## MAKE CHICAGO THE MEDICAL CENTER OF THE WORLD

Recent comment in one of Chicago's largest daily newspapers ran to the effect that from 10,000 to 15,000 Chicago patients go annually from this city to a much advertised and highly exploited clinic in a nearby state. Undoubtedly an equal number of persons seek a similar clinic in another nearby state.

This of course is both needless, nonsensical and inexcusable. That Chicago doctors, both competent in themselves and with thoroughly efficient co-operative facilities should lose this great number of patients is culpable. Nowhere is the ability of Chicago's several thousand medical practitioners, surgeons and specialists surpassed, and it is doubtful if many are even equalled. Chicago stands at present the medical center of the world.

## THE 1930 ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY

The 1930 Annual meeting of the Illinois State Medical Society will be held in Joliet on May 20, 21, and 22, 1930. The Will-Grundy Medical Society, the host society, has started the arrangements for a highly successful meeting. Dr. B. G. Wilcox, Joliet, has been selected as General Chairman of the Arrangement Committee and has grouped into his committee, the following:

### COMMITTEE ON ARRANGEMENTS

General Chairman, B. G. Wilcox.

Chairman, Reception Committee, E. A. Kingston.

Chairman, Committee on Meeting Places, R. Ahlvin.

Chairman, Registration Committee, V. Cohenour.

Chairman, Finance Committee, G. Houston.

Chairman, Contact Committee, Edward Talbot.

Chairman, Committee on Information and Hotels, R. B. Leach.

Chairman, Committee on President's Dinner, W. Hedges.

Chairman, Transportation Committee, Walter Huey.

Chairman, Entertainment Committee, B. Klein.

Chairman, Committee on Exhibits, Raymond Brown.

Chairman, Woman's Auxiliary Committee, Marion M. Bowles.

Secretary and Treasurer of Committee, Paul E. Landmann.

It is the desire of the Committee on Arrangements to cooperate with the Illinois State Medical Society, its officers, the Council, and officers of Scientific Sections as thoroughly as possible in making the 1930 annual meeting one to be long remembered.

More definite plans concerning the 1930 Annual Meeting will be given out at an early date.

## MEMBERS OF STATE SOCIETY WHO DESIRE TO READ PAPERS AT ANNUAL MEETING OF THE STATE SOCIETY

All members of the Illinois State Medical Society in good standing, who desire to present papers at the 1930 Annual Meeting of the Society in Joliet, May 20, 21, 22, 1930, should get in touch with the officers of the Section in which they are interested as early as possible. The subject of the paper, nature of same, or a synopsis should be submitted with the request. The number of papers to be presented in each section is limited, and the Section Officers are anxious to have their programs completed as early as possible. It is the usual custom to divide the number of papers in each section, between members in the Chicago Medical Society, and members of Down-state Societies.

The following are officers of the several sections:

### SECTION ON MEDICINE

Dr. Frank Deneen, Chairman, Bloomington.

Dr. L. D. Snorf, Secretary, 25 East Washington Street, Chicago.

### SECTION ON SURGERY

Dr. F. L. Brown, Chairman, 4034 West Madison Street, Chicago.

Dr. J. H. Bacon, Secretary, Peoria.

### SECTION ON EYE, EAR, NOSE AND THROAT

Dr. Walter Stevenson, Chairman, Quincy.

Dr. Harry S. Gradle, Secretary, 58 East Washington St., Chicago.

### SECTION ON PUBLIC HEALTH AND HYGIENE

Dr. John J. McShane, Chairman, Springfield.

Dr. Chas. H. Miller, Secretary, 826 East 61st Street, Chicago.

#### SECTION ON RADIOLOGY

Dr. I. S. Trostler, Chairman, 25 East Washington St., Chicago.

Dr. Henry W. Grote, Secretary, Bloomington.

#### SECRETARIES' CONFERENCE

Dr. W. H. Smith, President, Benton.

Dr. I. L. Foulon, Vice-President, East St. Louis.

Dr. W. D. Murfin, Secretary, Decatur.

It is the desire of each Section, to have the best program for 1930, that it is possible to get, and the papers must be carefully selected, which makes it necessary to submit as much information relative to the nature of same, as possible, so the programs can cover as wide a range as possible in each section.

#### DOCTORS DESIRING TO PRESENT PAPERS BEFORE THE 1930 MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY

##### TAKE NOTICE.

Members of the Illinois State Medical Society wishing to present papers before the Surgical Section at the next meeting in Joliet, Illinois, May 20, 21 and 22, 1930, kindly communicate with the undersigned.

The title and synopsis of the subject must be in the hands of the Secretary not later than January 15, 1930.

FRANK L. BROWN, M. D.,  
Chairman, Section on Surgery,  
4034 Madison St., Chicago, Ill.  
JAY H. BACON, M. D.,  
Peoria Life Insurance Bldg.,  
Peoria, Ill.

#### ANNUAL CONVENTION OF THE TRI-STATE MEDICAL ASSOCIATION OF MISSISSIPPI, ARKANSAS AND TENNESSEE

Illinois doctors are invited to attend the forty-sixth annual convention of the Tri-State Medical Association of Mississippi, Arkansas and Tennessee at Hotel Peabody, Memphis, Tennessee, January 14-16, 1930.

For detail program see advertisement in the advertising pages of this issue.

#### WANTED: BACK NUMBERS OF THE ILLINOIS MEDICAL JOURNAL

The Bureau of Science Library, Department of Agriculture and Natural Resources, Manila, Philippine Islands, desire back numbers of the JOURNAL as follows:

Vol. 29—February and March issues, 1916.

Vol. 30—August and December issues, 1916.

Kindly send numbers asked for to the ILLINOIS MEDICAL JOURNAL, 185 N. Wabash Ave., Chicago.

The managing editor would like a copy of Vol. 26, July, 1914. Please state price.

#### FIFTH INTERNATIONAL CONGRESS OF PHYSIOTHERAPY, LIEGE, SEPT. 4-8, 1930

The organization of this Congress is progressing rapidly and we would draw the attention of physicians to the real union which will take place in Liege on the occasion of the International Exposition and the Centenary of Independence.

Physicians who wish to be enrolled may send in their titles and subscriptions for membership in the Congress.

Acceptances may be sent from now on to Dr. Dubois-Trepagne, Secretary-General, 25 Louvrex Street, Liege, Belgium, with the dues of 150 Belgium francs. This will facilitate the organization of a Congress which will be noteworthy among the sessions of 1930.

#### AMERICAN MEDICAL ASSOCIATION

ABSTRACT OF THE PROCEEDINGS OF THE HOUSE OF DELEGATES AT THE PORTLAND SESSION OF THE AMERICAN MEDICAL ASSOCIATION  
JULY 8 TO 12, 1929

The eightieth annual session of the American Medical Association was held in Portland, Oregon, July 8 to 12, 1929.

The minutes of the seventy-ninth annual session were approved as printed. The annual addresses of the speaker, the president, and the president-elect were heard by the House and referred to the Reference Committee on Reports of Officers. These addresses appeared in *The Journal of the American Medical Association* for July 20, 1929. . . .

That part of the report of the Board of Trustees dealing with the need for a new building to house the activities of the Association was referred to a special committee appointed by the speaker on authorization of the House.

*History of the American Medical Association.*—Dr. William Allen Pusey, delegates from Illinois, submitted



a resolution providing for the appointment of a committee by the Board of Trustees to direct the preparation and publication of a comprehensive history of the Association. This resolution, having been referred to the Board of Trustees, was recommended for adoption and the recommendation was approved by the House of Delegates.

*Practice by Corporations and Other Groups and the Relationship of Physicians Thereto.*—Dr. William Allen Pusey, delegate from Illinois, presented a resolution providing that the Judicial Council of the Association be asked to present to the House of Delegates at the annual meeting in 1930 a comprehensive statement for the guidance of the American Medical Association concerning the practice of medicine by corporations, by clinics, by philanthropic organizations, by industrial organizations, by demonstrations and by similar organizations, and concerning the relationship of physicians thereto.

This resolution was considered by the House of Delegates in executive session. The resolution was adopted.

*Home for Indigent Physicians.*—Dr. J. Norman Henry of Pennsylvania submitted the report of a special committee appointed to study the need for the establishment of a home for needy physicians. This report was referred to the Board of Trustees and was recommended for adoption. After discussion by several delegates, the recommendations of the Board of Trustees were approved, and the report of the committee adopted. The report of the committee advised against the establishment by the Association of a home or homes for indigent physicians, and expressed the opinion that "it is not, nor should it be, a function of the American Medical Association at this time to undertake the care of indigent physicians in any way."

*Lists of Physicians in Classified Telephone Directories.*—Dr. G. Henry Mundt, delegate from Illinois, submitted a resolution providing that when publishers of classified telephone directories impose a charge for listing the names of ethical physicians in such directories, component county medical societies of the American Medical Association be advised to discontinue such listings in classified directories. The Reference Committee on Legislation and Public Relations, to which this resolution was referred, recommended the adoption of the resolution and the recommendation of this Reference Committee was approved by the House of Delegates.

*Dangers of Illuminating Gases and Gases Used in Electrical Refrigeration.*—Dr. J. W. Van Derslice, delegate from Illinois, submitted a resolution providing for the appointment by the Board of Trustees of a committee to study and report on the menaces to health and to life from carbon monoxid gas as a constituent of illuminating gas and as a by-product of the combustion of gasoline in automobiles; on the dangers of gases used in electrical refrigeration, and on steps necessary to be taken for the protection of the public. This resolution, referred to the Reference Committee on Hygiene and Public Health, was adopted by the House.

*Advertising Hospitals.*—Dr. Burt R. Shurly, delegate from the Section on Laryngology, Otology, and Rhi-

nology, presented a resolution providing that inasmuch as some hospitals, municipal and otherwise, have advertised in the daily press "and have given to the public stories of their special excellence and efficiency as compared with other hospitals," such advertisements be collected by the Council on Medical Education and Hospitals and that the "question of hospital advertising be given due consideration and reported to the House of Delegates at the next annual meeting and the rating of hospitals be affected according to the unethical advertising published."

*Needs of Small Hospitals.*—Dr. T. O. Freeman, delegate from Illinois, submitted resolutions providing that the Council on Medical Education and Hospitals be ready to make a survey of the needs of smaller hospitals, to render all possible assistance to such institutions desirous of improving their system of records and their services to the public, and to offer its assistance to state registration departments to the end that such departments may secure such aid as they desire in connection with their classification of accredited hospitals. The Reference Committee on Medical Education, to which this resolution was referred, reported to the House of Delegates that, in its opinion, the investigation begun several years ago are now being carried on by the Council on Medical Education and Hospitals, would fulfill all the objects of the resolution, and that the Reference Committee believed that the Council stands ready to give all possible assistance to small hospitals in solving their problems. The Reference Committee recommended that the resolution be not adopted, and this recommendation was approved by the House of Delegates.

*Direction of Red Cross Nurses by Cultists.*—Dr. J. C. Litzenberg, delegate from Minnesota, submitted a resolution adopted by the Minnesota State Medical Association, disapproving the policy of the American Red Cross in officially authorizing Red Cross nurses to nurse patients under the care of cultists. The Reference Committee on Legislation and Public Relations recommended that the American Medical Association disapprove any change in policy by the American Red Cross, whereby the nurses of that organization would be available for services to patients under the care of cultists, and that the secretary of the Association communicate with the proper officials of the American Red Cross and advise that organization of the attitude of the House of Delegates. The recommendations of the Reference Committee were adopted.

*New Building.*—The special committee, to which that part of the record of the Board of Trustees dealing with the need for a new building for housing the activities of the Association was referred, expressed its conviction that it is desirable for the Association to have a building "that would be visible evidence of the dignity, importance, and power of the Association," and recommended that it should be left to the Board of Trustees to perfect plans for providing the building.

This committee also expressed the opinion that the subscription price of The Journal is now relatively greatly below the price of other journals that approxi-

mate it in extent and quality, and suggested that the Board of Trustees should consider the question of increasing the subscription of The Journal.

A third recommendation of the committee was to the effect that it would be appropriate for the Board of Trustees, in a building program, to solicit memorial contributions, both large and small, from members of the Association. The committee expressed its conviction that as the Association shows increased evidence of strength and permanence it will gradually become the recipient of an increasing number of memorial contributions.

The report of the special committee was adopted by the House of Delegates.

Later in the proceedings, Dr. William Allen Pusey, delegate from Illinois, introduced a proposed amendment to the by-laws, providing that the subscription price of The Journal shall not exceed \$8. This proposed amendment was adopted by the House, and the Board of Trustees is thereby authorized to increase the subscription price of The Journal to a sum not in excess of \$8 a year.

*Periods of Practical Experience for Medical Students.*—Dr. E. J. Goodwin, delegate from Missouri, presented a resolution that had been adopted by the Missouri State Medical Association providing that medical schools be encouraged to arrange for periods of practical experience for students with practitioners of high standing, preferably in rural communities, and that the Council on Medical Education and Hospitals be instructed to consider the plan proposed by the Missouri State Medical Association and, if the plan is found to be feasible and beneficial, the Council be urged to encourage medical schools to "inaugurate suitable methods for providing these vacation periods of practical experience for their students." The Reference Committee on Medical Education reported favorably on this resolution, and it was adopted by the House of Delegates.

*Committee on Military Affairs and National Defense.*—Dr. H. C. Mallory, delegate from the United States Army, presented a resolution providing for the appointment by the Board of Trustees of a special permanent committee to be known as the Committee on Military Affairs and National Defense, to which shall be referred matters pertaining to national defense and military preparedness. The adoption of this resolution was recommended by the Board of Trustees, and this recommendation was approved by the House of Delegates.

*National Defense Act of 1920.*—Dr. Holman Taylor, delegate from Texas, introduced a resolution providing that the American Medical Association, through its House of Delegates, go on record as heartily approving the National Defense Act of 1920. The Reference Committee on Legislation and Public Relations reported the resolution favorably, and it was adopted.

*Increased Tariff on Surgical Instruments.*—Dr. Albert Soiland, delegate from California, submitted a resolution providing that the House of Delegates record its opposition to the passage of a bill providing for increased tariff on surgical instruments, X-ray equipment,

vacuum tubes, valve tubes, and scientific glassware. The Board of Trustees recommended the adoption of the resolution, and the House of Delegates approved this recommendation.

*Standards of Physical Fitness of Automotive Operators.*—Dr. H. C. Macatee, delegate from the District of Columbia, presented a resolution setting out that relatively few accidents occur because of defects of sight and hearing and providing that the House of Delegates "consider the advisability of amending the present standards of physical fitness of automotive operators, adopted by this Association, by the adoption of standards of mental and moral fitness to be recommended for adoption by the several states as a condition for issuing licenses to operate motor vehicles, and that this resolution be referred to a special committee for consideration and report at the next annual session." The Reference Committee on Hygiene and Public Health recommended the adoption of the resolution. On motion of Dr. G. Henry Mundt, delegate from Illinois, the resolution was amended by deleting a statement in the preamble to the effect that relatively few accidents occur because of defects of sight and hearing. The resolution as amended was adopted.

*Medical Expert Opinion.*—Dr. Tom B. Throckmorton, delegate from the Section on Nervous and Mental Diseases, submitted the following resolutions, which had been approved by that section.

Whereas, The House of Delegates of the American Medical Association has previously expressed its dissatisfaction with the present status of medical expert opinion evidence and has expressed its approval of the efforts of the American Bar Association and of the various bar and medical societies to correct by remedial legislation and by changes in court procedure the present undesirable features of the introduction of such evidence; and

Whereas, The American Psychiatric Association and the National Crime Commission are devoting much study to the subject of such evidence, particularly as relates to psychiatric matters in criminal cases, with a view to improving procedure; and

Whereas, The Criminal Law Section of the American Bar Association has appointed a committee to collaborate with a committee of the American Psychiatric Association in formulating plans for bringing about a betterment of the present undesirable situation; and

Whereas, Such efforts are of vital interest and importance to the entire medical profession, be it therefore

Resolved, That the House of Delegates of the American Medical Association express its continued interest in the correction of the abuse of medical expert opinion evidence, and that it offer to the American Bar Association, the American Psychiatric Association, and the National Crime Commission, the various state and county medical and bar associations, and such other reputable organizations as are actively pursuing efforts directed toward such correction the assistance and coöperation of the American Medical Association in promoting the passage of appropriate legislation and in bringing about



suitable changes in court procedure with reference to such evidence; and be it further

Resolved, That the House of Delegates approves the principle of securing in the case of all capital charges and in the case of as many other criminal charges as the psychiatric facilities of the state will permit an impartial and routine mental examination of the defendant in advance of the trial as a means of obviating the contentious introduction of partisan testimony, and that it approves further the principle of removing as far as possible the question of sanity from the trial itself, reserving the employment of psychiatric data for a post-trial inquiry to determine what treatment is appropriate to the convicted person; and be it further

Resolved, That a copy of this resolution be forwarded to the American Bar Association, the American Psychiatric Association, and the National Crime Commission.

On motion of Doctor Throckmorton, seconded by Dr. A. T. McCormack, delegate from Kentucky, and after discussion by various members of the House, these resolutions were adopted by the House of Delegates.

*Resolution from Section on Dermatology and Syphilology.*—Dr. F. W. Cregor, delegate from the Section on Dermatology and Syphilology, submitted resolutions providing that treatment for hypertrichosis by the tricho system and by allied systems employing radiation be condemned as highly dangerous to the patient, and "that all cases presenting the effects of this type of treatment and seen by members of the medical profession be reported to the Bureau of Investigation of the American Medical Association." The resolutions were adopted.

*Amendment to the Principles of Medical Ethics.*—The Judicial Council in its report to the House of Delegates, recommended that Section 3, Article VI, Chapter II, of the Principles of Medical Ethics be amended by substituting the following:

#### COMMISSIONS

Section 3. When a patient is referred by one physician to another for consultation or for treatment, whether the physician in charge accompanies the patient or not, it is unethical to give or to receive a commission by whatever term it may be called or under any guise or pretext whatsoever.

This recommendation of the Judicial Council was adopted by the House of Delegates, and the Principles of Medical Ethics were so amended.

*Message from President of Woman's Auxiliary.*—Dr. J. H. J. Upham, member of the Board of Trustees, presented a report from the Woman's Auxiliary to the House of Delegates submitted by its president, Mrs. Allen H. Bunce of Atlanta, Georgia, and this message was accepted by the House and made a part of its records.

*Election of Officers.*—The following new officers were elected:

President-elect, William Gerry Morgan, Washington, D. C.

Vice-president, Ernst A. Sommer, Portland, Oregon.

Vice-speaker of the House of Delegates, Albert E. Bulson, Fort Wayne, Indiana.

Member of the Board of Trustees, Allen H. Bunce, Atlanta, Georgia, to succeed E. H. Cary, Dallas, Texas.

*Place of 1930 Annual Session.*—Detroit, Michigan, was selected as the place for holding the next annual session of the American Medical Association in 1930.

## Correspondence

### LAY NEWSPAPER INTERESTED IN OUR STAND ON NEWSPAPER ADVERTISING

THE LONG BEACH SUN

November 25, 1929.

Dr. Charles B. Reed, Pres.,  
The Chicago Medical Society,  
Chicago, Illinois.

Dear Dr. Reed:

We are very much interested in your stand on newspaper advertising for members of the Medical Society. This matter has been discussed here in Long Beach.

We would very much appreciate copies of THE ILLINOIS MEDICAL JOURNAL for October and any other addresses or decisions you have made on this subject with the view to your serving as a guide in our local field.

With kindest regards, I am

Very truly yours,

ROBERT HENDERSON.

## Book Reviews

THE MEDICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 13, No. 2. (Chicago Number, September, 1929.) Octavo of 232 pages with 61 illustrations. Per Clinic year, July, 1929, to May, 1930. Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company.

The contributors to this number are Drs. Elliott, Pollock, Grulee, Williamson, Hamburger, Keeton, O. H. Robertson, Walter Lincoln Palmer, Gerstley, Sloan, Finnerud, Meyer.

DISEASES OF THE CHEST AND THE PRINCIPLES OF PHYSICAL DIAGNOSIS. By George W. Norris, M. D., Professor of Clinical Medicine in the University of Pennsylvania, and Henry R. M. Landis, M. D., Professor of Clinical Medicine, University of Pennsylvania; Director of the Clinical and Sociological Departments of the Henry Phipps Institute of the University of Pennsylvania, with a chapter on the Trans-

mission of Sounds Through the Chest, by Charles M. Montgomery, M. D., and a chapter on the Electrocardiograph in Heart Disease, by Edward Krumbhaar, Ph.D., M. D. Fourth Edition, revised. 954 pages with 478 illustrations. Philadelphia and London: W. B. Saunders Company, 1929. Cloth \$10.00 net.

In this work new material has been added and many sections have been revised, little has been omitted that is of practical value, the book primarily is meant for the clinician.

INTERNATIONAL CLINICS. Edited by Henry W. Cat-tell, M. D., and others. Volume III. Thirty-ninth series, 1929. Philadelphia & London. J. P. Lippincott.

TULAREMIA HISTORY PATHOLOGY DIAGNOSIS AND TREATMENT. By Walter M. Simpson, M. D. With 53 text illustrations and 2 color plates. New York. Paul B. Hoeber, Inc. 1929. Price \$5.00 net.

INTERNS HAND BOOK. By M. S. Dooley, M. D. Philadelphia and London. J. B. Lippincott Company. 1929. This work is intended as a guide to rational drug therapy, clinical procedure and diets by members of the faculty of the College of Medicine, Syracuse University.

MEDICAL LEADERS FROM HIPPOCRATES TO OSLER. By Samuel W. Lampert, M. D., and George W. Goodwin, M. D. Illustrated. Indianapolis. The Bobbs Merrill Company. Price, \$5.00.

The authors, both eminent in their profession, are in active private practice in New York City. In this history the authors attempt to follow the sequence of events from the remarkable medicine produced by Greek culture down to the active and progressive medical science of the civilization of the twentieth century. The evolution from the explanation of illness by the presence of demons, by witchcraft and by supernatural causes to the modern conception of the causation of infections and communicable diseases by living germs.

In the chapter on Mesmer and Cagliostro there is an amusing account of quacks and charlatans from the seventeenth to the twentieth century.

DISEASES OF THE BLOOD. By Paul W. Clough, M. D. New York & London. Harper & Brothers. 1929. Price \$2.50.

In this work the author discusses the various types of blood cells and their origins, likewise he discusses the anemias, the leukemias and their related conditions. There is an excellent chapter on blood transfusion, also a section on methods of examination that contains all that is necessary for the practitioner to know.

THE PATHOLOGY OF THE EYE. By Jonas S. Friedenwald, M. D. Illustrated with 253 figures. Mainly Microphotographs. By Helenor Campbell. New York. The Macmillan Company. 1929. Price \$4.50.

This work is based on a course of lectures prepared for the instructions of medical students and surgical

house officers in the department of ophthalmology of Johns Hopkins Medical School and Hospital.

THE NUTRITION OF HEALTHY AND SICK INFANTS AND CHILDREN FOR PHYSICIANS AND STUDENTS. Second revised edition with 78 illustrations (including charts) and 6 tables authorized translation by Benjamin M. Gasul, F. D. Philadelphia. F. A. Davis Company. 1929. Price \$3.50 net.

This work represents the practical application of Professor Pirquet's nemsystem. There is no text book in the English language that deals with the clinical features of this system, it was for this reason that the work was translated into English so that it would be available to the English speaking physician.

CLINICAL MEDICINE FOR NURSES. By Paul H. Ringer, M. D. Illustrated. Third revised edition. Philadelphia. F. A. Davis Company. 1929. Price \$3.00 net.

The characteristic features of this work are clearness of expression; convenience of arrangement, conciseness of statement sufficiency of detail, up-to-date text matter, thoroughly practical and exceptionally well indexed for ready reference.

#### NEW LAWS FOR DRIVERS OF HUMAN MOTORS

Pull your machine up alongside a filling station regularly three times a day and put into it high-test fuel, such as leafy green vegetables, fresh fruit, milk, dark bread and real butter. Do not use substitutes—you wouldn't do it with a limousine. This high-test fuel is remarkable in that it builds your automobile as well as puts pep in your motor.

Run your human automobile into the garage each night for eight hours of rest. Remember to turn on the fan by opening windows and getting plenty of fresh air. This will prevent flat tires.

Run your automobile body onto the wash rack daily.

Keep the chewing apparatus clean. Brush it morning and night.

Give your human car plenty of water to prevent a dry radiator.

Visit expert mechanics regularly (the doctor once a year and the dentist at least twice a year). They can help you overhaul your machine and discover a little knock in the engine before you hear it.

Put a self-starter on your flesh-and-blood vehicle—that is, remember the main facts about putting pep in your motor every day.—*Ill. Medical Journal*.

#### BUG MATHEMATICS?

A dusky son of Alabama was busily engaged in a cootie hunt. When asked by a sergeant what he was doing, he replied:

"T'se a-huntin' fo' dem 'rithmetic bugs."

"Why do you call them arithmetic bugs?"

"'Cause dey adds to ma misery, dey subtracts from ma pleasure, dey divides my attention, and dey multiplies like hell."—*Medical Insurance*.



## Original Articles

### THE INFLUENCE OF SODIUM CHLORIDE ON BLOOD PRESSURE\*

ROBERT S. BERGHOFF, M. D.

Clinical Professor of Medicine, Loyola University School of Medicine.

ANGELO S. GERACI

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CHICAGO

Medical literature of the past two decades can hardly be accused of treating sparingly the subject of sodium chloride and its effects on hypertension. Numerous papers, some of them very excellent and thorough, have appeared in both domestic and foreign publications. Several, it seemed to us, stood out preeminently and possessed unusual interest. Specifically, the work of E. R. Blaisdell and Bernstein is worthy of careful consideration.

However, a serious perusal of the entire field leaves one with a retrospective impression of a vast bulk of scientific theory unsupported with tangible experiment. So that the practically universal acceptance of the dictum that sodium chloride (table salt) is inimical to hypertension, is a pardonable incentive for wonderment under the circumstances. It, furthermore, offers an enticing inducement for original work. It would be wrong to infer that no such efforts have been made and recorded. Witness the experiments of E. G. B. Calvertz, whose conclusions are logical and stimulating and are as follows:

1. Low sodium chloride intake lowers the blood pressure in high blood pressure with no renal damage.
2. High sodium chloride intake is injurious to high blood pressure with renal damage.
3. Low sodium chloride intake is useful in cases of secondary contracted kidneys.
4. Sodium chloride excretion is least in secondary contracted kidneys: better in chronic interstitial nephritis; a little subnormal in arteriosclerosis, and marked and prompt in normal cases.

It seemed to us justifiable, however, to inquire what might be the effect of an unusually high

sodium chloride intake over a protracted period, on normal individuals. Granting that such an excess can be an unfriendly circumstance in existing hypertension, might it also act as an inciting factor as a predisposing agent towards hypertension? We turn again to the literature and vainly sought a satisfactory answer. We encountered a dearth of recorded opinion, none, in fact, to the point. Accordingly the following work was undertaken by one of us (A. S. Geraci). Fifty individuals of varied complaints were selected, carefully charted and indexed. A few were hypertensive, but for the most part, as the charts will show, they comprised a hodge-podge of minor irrelevant abnormalities. Four blood pressure readings at weekly intervals were made, and a mean average arrived at before the actual experiment was begun. Thereupon they were given an extravagant allowance of sodium chloride. We experienced an uncertainty as to what proportion that allowance should be—whether to hold it at the figure representing a generous maximum in the average diet, or to grossly exceed it. The latter was decided upon and 3 drams (180 grains) was dispensed daily. At the outset, unforeseen difficulties were encountered. In the first place, individuals there are and none too few, who cannot use salt. This aberrancy runs the entire gamut of antipathy, distaste, idiosyncrasy and actual nausea. In the second place, we were dealing with patients with heterogenous complaints who, if they were to receive no drugs which might interfere with our experiment, refused to accept 3 teaspoonfuls of table salt daily as a cure-all. Both difficulties were obviated by masking the sodium chloride in the vehicle of a capsule of which six ten-grain capsules were given at three-hour intervals, plus two teaspoonfuls in the seasoning.

This therapy was continued over one month, with a careful blood pressure reading each week. We believe the chart which graphically tells the story of the first phase of the experiment is both interesting and instructive.

There then followed one month of no sodium chloride, with weekly blood pressure readings also portrayed in the chart. It was next decided to determine whether the sodium or the chlorine ion was responsible for the rather marked changes noted. Accordingly, six drams of

\*Read before Section on Medicine, Illinois State Medical Society, Peoria, May 22, 1929.

## TABULATION OF FIFTY CASES

Case Number	Age	Diagnosis	Average Normal Blood Pressure (Four Weekly Readings)	Average Blood Pressure With High Salt Intake (Four Weekly Readings)	Average Increase in Blood Pressure Over Normal (After 4 Wks. High Salt Intake)	Average Blood Pressure With Normal Salt Intake (Four Weekly Readings)	Average Increase or Decrease of Blood Pressure Over Normal With Normal Salt Intake	Average Blood Pressure with Sodium Bicarbonate Intake (Four Weekly Readings)	Average Increase or Decrease of Blood Pressure Over Normal with Sodium Bicarbonate Intake
1.	50	Chronic Interstitial Nephritis....	190/124	226/122	36	202/126	12	180/112	—10
2.	63	Secondarily Contracted Kidney Arteriosclerosis .....	208/ 96	238/112	30	206/ 96	2	204/ 90	— 4
3.	53	Chronic Interstitial Nephritis...	116/ 94	156/102	40	136/ 96	30	120/ 96	4
4.	58	Hypertension, Arteriosclerosis...	182/ 88	202/ 98	20	196/ 98	14	176/ 84	— 6
5.	47	Hypertension, Mitral Insufficiency	160/100	186/114	26	172/110	12	156/ 94	— 4
6.	57	Arteriosclerosis, Mitral Insufficiency .....	150/100	176/112	26	168/110	16	152/ 96	2
7.	62	Arteriosclerosis, Chronic Myocarditis .....	140/120	168/132	28	154/128	14	146/124	6
8.	68	Hypertension, Arteriosclerosis..	172/ 84	194/102	22	186/ 98	14	176/ 86	4
9.	39	Hypertension .....	188/116	204/130	16	196/122	..	178/102	—10
10.	43	Hypertension, Chronic Cervicitis	180/122	204/128	24	198/128	18	174/104	— 6
11.	70	Hypertension, Chronic Cholecystitis .....	168/ 70	166/ 70	— 2	164/ 68	— 4	158/ 82	—10
12.	32	Hypertension, Hyperthyroidism..	162/ 70	168/ 72	6	164/ 74	2	154/ 78	— 8
13.	21	Bilateral Salpingitis, Cervicitis..	96/ 70	110/ 82	14	104/ 84	8	98/ 74	2
14.	28	Sebaceous Cyst of Nose.....	114/ 70	142/108	28	122/ 74	8	120/ 84	6
15.	36	Bilateral Salpingitis, Oophoritis.	108/ 60	120/ 68	12	118/ 66	10	106/ 66	2
16.	34	Mitral Insufficiency.....	122/ 60	130/ 64	8	126/ 62	4	122/ 66	..
17.	45	Carcinoma of Cervix.....	126/ 80	130/ 84	4	126/ 82	..	122/ 78	— 4
18.	46	Carcinoma of Cervix.....	114/ 70	116/ 74	2	116/ 68	2	118/ 76	4
19.	43	Menopause .....	122/ 88	140/ 92	18	136/ 92	14	130/ 90	8
20.	44	Diabetes Mellitus.....	130/ 88	128/ 90	— 2	130/ 90	..	132/ 86	2
21.	36	Chronic Pelvic Peritonitis Salpingitis .....	108/ 70	110/ 74	2	104/ 70	— 4	118/ 74	10
22.	24	Peptic Ulcer.....	106/100	120/112	14	120/106	14	110/ 88	4
23.	30	Atonic Constipation, Secondary Anemia .....	148/ 90	138/ 88	—10	142/ 90	— 6	148/ 86	..
24.	32	Tuberculosis of Cervical Glands.	130/ 84	108/ 80	—22	118/ 84	—12	118/ 80	—12
25.	31	Duodenal Ulcer.....	96/ 52	110/ 66	14	108/ 56	12	102/ 58	6
26.	50	Mitral Insufficiency, Chronic Myocarditis .....	104/ 60	132/ 78	28	130/ 78	26	114/ 78	10
27.	44	Menopause .....	120/ 78	158/120	38	140/108	20	126/ 84	6
28.	38	Spastic Colitis.....	120/ 60	120/ 60	..	116/ 62	— 4	122/ 72	2
29.	32	Chronic Pelvic Peritonitis.....	130/ 80	132/ 80	2	132/ 82	2	130/ 84	..
30.	34	Atonic Constipation.....	88/ 56	108/ 60	20	106/ 60	18	100/ 62	12
31.	42	Diabetes Mellitus.....	114/ 82	124/ 88	10	120/ 82	6	118/ 78	4
32.	67	Tabes Dorsalis.....	130/ 88	142/ 94	12	136/ 90	6	128/ 90	— 2
33.	28	Cervicitis .....	128/ 84	146/ 98	18	138/ 88	10	132/ 88	4
34.	29	Chronic Pelvic Peritonitis.....	98/ 64	112/ 70	4	100/ 68	2	92/ 58	— 6
35.	35	Retroflexion, Cervicitis .....	132/ 78	132/ 76	..	134/ 76	2	134/ 84	2
36.	68	Parkinsons Disease.....	158/ 94	162/ 98	4	158/ 98	..	150/ 88	— 8
37.	34	Cervicitis With Erosion.....	124/ 74	132/ 82	8	128/ 76	4	130/ 80	6
38.	47	Chronic Arthritis .....	120/ 90	116/ 88	— 4	118/ 92	— 2	124/ 88	4
39.	26	Retroflexion, Cervicitis.....	148/102	154/110	6	154/108	6	142/ 92	— 6
40.	58	Cholelithiasis, Chronic Cholecystitis .....	154/ 98	156/ 96	2	156/ 98	2	146/ 90	— 8
41.	30	Pelvic Peritonitis with Adhesions	138/ 90	150/ 94	12	148/ 94	10	140/ 86	2
42.	38	Asthma .....	148/ 90	150/ 88	2	152/ 92	4	144/ 82	— 4
43.	29	Spastic Colitis .....	120/ 86	126/ 90	6	122/ 90	2	118/ 74	— 2
44.	28	Bilateral Salpingitis .....	142/ 94	156/ 96	14	152/ 92	10	142/ 84	..
45.	32	Pelvic Peritonitis, Retroflexion..	118/ 72	130/ 78	12	124/ 78	6	122/ 76	4
46.	66	Atonic Constipation .....	88/ 62	94/ 70	6	92/ 68	4	94/ 64	6
47.	16	Mitral Insufficiency.....	114/ 74	134/ 76	20	128/ 76	14	118/ 78	4
48.	20	Chronic Bronchitis .....	110/ 82	118/ 86	8	112/ 88	2	114/ 80	4
49.	30	Retroversio-Uteri .....	136/118	144/126	8	142/122	6	134/102	— 2
50.	34	Mitral Insufficiency.....	116/ 78	132/ 84	16	124/ 80	8	120/ 76	4

sodium bicarbonate were substituted for the sodium chloride and the results again recorded.

It seems to us unnecessary to state that no

conclusions are attempted from this brief, crude preliminary effort. Several interesting points can, however, be made.



1. An excessive intake of sodium chloride (six drams) markedly elevates blood pressure in true nephritics and almost equally so in arteriosclerosis.

2. An excessive intake of sodium chloride even in individuals with a normal and subnormal vascular tension, elevates blood pressure.

3. An excessive intake of sodium chloride (six drams) in individuals with organic heart disease and a normal blood pressure showed a pronounced increase in every instance.

4. An equal amount of sodium bicarbonate does not cause similar results.

5. Sodium chloride in doses of six drams daily (approximately twice the maximum consumed in the average normal diet) causes nausea in some individuals.

These observations were carried on in the service of Dr. Robert S. Berghoff at Mercy Hospital, Chicago.

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#### HYPERTENSION\*

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We have read much in both lay periodicals and magazines, as well as in our medical literature in recent years, of the prolongation of life and the increase of longevity. Few public health officials, writing or speaking upon this subject, fail to stress this point.

Fahr<sup>1</sup> quotes Pearl as saying "That during 2,000 years man's expectation at birth has been steadily improving, while at the same time his expectation of life at advanced age has been steadily worsening."

Are more people in proportion to population really passing successfully through the sixth decade and reaching the threescore and ten or beyond than during a century ago?

At the present time we can look forward to an average length of life to about 55 to 58 years for a child when born. This has increased about a score of years during the last century. It is

well understood by the medical profession that this has been brought about largely by the control of epidemic and endemic diseases and better living conditions during infancy and childhood today. How about the adult who has reached forty-five or fifty? "His<sup>2</sup> expectancy is scarcely better than his eighteenth century forbearers of the same age."

Of the diseases that endanger the life of an individual who has reached this age, such as cancer, coronary arteriosclerosis, and cerebral arteriosclerosis, blood pressure or hypertension, is no doubt first.

It is estimated by Fahr<sup>3</sup> that 140,000 deaths in persons fifty years or older are due to hypertension or hyperpiesia, wholly or in part, about 23 per cent. of all deaths in all persons fifty years of age or older. This is twice the death rate for cancer, and equal to that of cancer including the respiratory diseases, such as tuberculosis, influenza and pneumonia.

It is generally stated that 50 to 55 per cent. of our hypertension patients die of heart failure, 35 to 40 per cent. of cerebral accident or apoplexy and 10 per cent. of uremia. These figures correspond to Fahr's<sup>4</sup> estimates in the Cardiac Division of the University of Minnesota.

As to the range of what is considered normal and abnormal blood pressure readings, Alvarez<sup>5</sup> in his statistics suggested that "systolic pressure above 130 for women and 140 for men were abnormal, while a diastolic pressure above 90 under forty years of age, and above 95 at ages above forty, definitely increased the mortality and are therefore abnormal."

Systolic blood pressure above 260 are unusual, and above 280 are rare. A diastolic that remains at 110 or above, regardless of rest and approved treatment, has a bad prognosis.

Ninety cases of hypertension, studied in private practice, are the basis of the data given in this paper, as well as the personal conclusions.

TABLE I

Total number cases reported:	90.
Living, 52, or 58%.	
Average age of living:	59 years.
Cases living under observation over 10 years:	6, or 6.66%.
Essential Hypertension:	2.
Mild Arteriosclerosis:	3.
Chronic Nephritis:	1.
Per cent. of living in decades:	
Under 50 years of age:	17%.
Over 70 years of age:	23%.
60 to 70 years of age:	25%.
50 to 60 years of age:	35%.

\*Read in Symposium on Blood Pressure at Annual Meeting of Illinois State Medical Society, Peoria, May 22, 1929.

TABLE 2

Number of cases dead: 38, or 42%.	
Average age at time of death: 67 years.	
Of the 38 that are dead, under observation from time of examination until death:	
Number dead at end of 2 years:	39.5%.
Number dead at end of 5 years:	63.2%.
Number dead at end of 7 years:	73.8%.
Number dead at end of 10 years:	89.5%.
Number dead who lived over 10 years:	10.5%.
Causes of Death: Cardiac:	
Decompensation:	31.6%
Angina Pectoris:	15.5%
Edema of Lungs:	5.2%
	52.3%
Cerebral Accident:	34.2%
Uremia:	7.9%
Urinalysis: Casts present in 61% of cases.	
Albumin and casts, 45% of cases.	

We will endeavor to discuss some of the many causes advanced in the past and that are being considered at present as to the cause of hypertension. The term "hypertension," as generally understood, refers to a pressure of or above systolic 160 and diastolic 100.

Classification, according to Norris,<sup>6</sup> except for an insignificant number of cases due to cerebrospinal pressure, are divided into two great groups:

1. Those without nephritis: Essential Hypertension.

2. Those with nephritis: Malignant Hypertension.

"The idea is gaining ground that chronic hypertension without renal disease results from long continued systemic intoxication with some chemical substances which not improbably may also produce nephritis. In other words, the nephritis does not primarily cause the hypertension nor the hypertension the nephritis, but both are caused by toxic products possibly different, possibly identical in character."

In the so-called essential hypertension cases, there is no evidence of nitrogen retention in the blood, except in the high blood uric acid value, which may be frequently found in this type of hypertension. This was called to our attention by Fischberg.<sup>7</sup> That blood non-protein nitrogen, urea and creatinin are not increased in essential hypertension is generally agreed.

The literature as to the etiology of hypertension is voluminous. More recently that of Fischberg, Jaffe, Fahr, Major, McDonald, Westphal and many others. Some of the numerous theories may be mentioned:

1. That the vascular disease is due to nephritis.

2. Intestinal stasis or infection of the bones, as well as chronic focal infections and severe infectious diseases.

3. The split products of protein digestion, causing intoxication from the metabolic processes.

4. Pressor substances in the blood, acting upon the vasomotor system, causing spasm of the arterioles.

5. Endocrine dysfunction of various types, associated with a metabolic disorder and diminished blood calcium content, this lowered calcium content influencing a condition of increased vasomotor tonus and irritability.

6. The recent studies of Major<sup>8</sup> on methylguanidine and creatinin in the blood indicate these substances are not excreted by certain hypertensives.

He states that:

The results of our observations indicate that many hypertensives belonging to the group of essential hypertension do not, as commonly stated, have a normal kidney function. They are unable to excrete normally two guanidin compounds, methyl-guanidin and methyl-guanidin acetic acid anhydride (creatinin). We do not know whether this deficiency is present in the beginning of the hypertension or whether it occurs later during the course of the hypertension. The further study of this problem is obviously desirable. Its solution may help decide the question whether a deficient excretion of these similar pressor substances is the cause of hypertension or whether this anomaly of excretion is the result of hypertension, and an aggravating complication. At any rate, we feel that this evidence indicates a frequent abnormality of kidney function in arterial hypertension, so that these results justify the conclusion that many patients with arterial hypertension who have a normal blood chemistry, as the term is generally employed, and who have an adequate kidney function when studied by the usual method, show evidence that the kidney is not functioning normally so far as the excretion of creatinin is concerned. It also indicates to us that in hypertensives the creatinin test for kidney function is more sensitive than the phenolsulphonephthalein test.

The more recent studies, particularly those quoted with my own observations, convinces me that kidney changes are present in these hypertension cases much earlier than we had formerly believed, and that all may have kidney complications that do not die earlier from heart failure or cerebral accident.

Jaffe<sup>9</sup> states that in early hypertension the primary renal lesion should be sought in the tufts of the glomeruli and that the fatal spasm



probably occurs in these. This interruption of the glomerular circulation results in the increase of pressure in the afferent arterioles. This distention in the arteriolar wall is the first change that is found after death. Later this is found in the tufts.

The afferent arterioles are also subject to irritating matter, endogeneous or exogeneous, as well as increased pressure in the lumen. This produces in these arteries proliferation of the intima, hyaline and lipoid degeneration which varies according to the injurious agent.

In the cases with a more universal arteriosclerosis, the process in the kidney as a rule is more advanced and more pronounced than in the brain, liver, etc. Only in the kidney is this alteration followed by a well-characterized destruction of the parenchyma, whereas it is absent in the other organs just mentioned. It can be stated, therefore, that the small arteries of the kidney, in particular, are disposed to sclerosis.

The question that arises in our minds when we consider hypertension is whether the hypertension or the lesion of the arteriole is primary. On account of the hypertrophy found in the wall of the arteriole, it is believed that this is secondary to the hypertension.

Keith, Wagener, and Kernohan<sup>10</sup> (Mayo Clinic) summarize the prognosis of severe or malignant hypertension:

In the cases of sustained high blood pressure and diffuse change in the arterioles, the course of the disease is usually rapidly fatal. The terminal clinical picture suggests simultaneous rapid functional failure of the brain, heart and kidneys. This hypertension syndrome can often be distinguished from benign hypertension and chronic glomerulonephritis. The chief points of distinction from the latter are the age incidence, the characteristic retinal picture, the absence of anemia, and the frequent adequacy of renal excretion.

An important study showing that myocarditis with low blood pressure is caused by a previous hypertension in a great majority of cases has been shown by O'Hare, Calhoun and Altnow.<sup>11</sup> They say:

We have fortunately been able to collect a series of fifty cases of chronic myocarditis, showing normal or low blood pressure, in which records of previous blood pressure were obtainable. These we have studied with especial reference to the evidences of retinal arteriosclerosis. Valvular disease, syphilis and hyperthyroidism did not play any part in these cases.

From these studies they state that chronic myocarditis in persons beyond middle life, in

the absence of syphilis, hyperthyroidism and valvular disease, is usually vascular in origin. Without doubt the small vessel sclerosis associated with the hypertensive process is the essential lesion, and it is possible to believe that in some cases this lesion may be present in the heart without hypertension. It is their contention, however, "that when the vascular lesion is evident in the eyegrounds it almost always means hypertension present or past."

It is in these cases where there is chronic myocarditis following hypertension and destruction of muscle fiber with coronary sclerosis, that bundle-branch block signs frequently appear.

Postmortem examinations made by Dr. E. T. Bell<sup>13</sup> show only ten per cent. of hypertension hearts have no demonstrable coronary arteriosclerosis. About 55 per cent. have a moderate degree of involvement of the coronaries, which is sufficient to cause demonstrable changes in the heart muscle which adds much to the burden of this already overworked left ventricle. Thirty-five per cent. of these hearts have more definite changes in the coronary vessels showing necrosis of the muscle fiber, still further handicapping these hearts with obstruction of the blood flow.

Foster<sup>14</sup> says:

This term, essential or primary hypertension, was first coined because it was found that an occasional case of high blood pressure showed at autopsy only insignificant disease of the kidneys. There are undoubtedly such cases, but they are uncommon, and even then you understand the latitude allowed the pathologist in deciding what is normal. The symptomatology of nephritis is quite varied and for all that is known to the contrary, it is quite likely that hypertension may often be the only manifestation for considerable periods of time. We have in these diseases a profound metabolic disturbance manifested sometimes chiefly as hypertension, again as frank nephritis, and in other cases as arterial sclerosis. It is premature to hold opinion as to which is cause, which effect. These are subjects for research, not for idle dogmatic statement.

Fahr states that about five per cent. of the hypertension hearts give a history of angina pectoris, either in its classic or less typical form, but none the less definite, and also that hypertension is the background in 75 per cent. of cases of chronic myocarditis.

In the ninety cases selected for this paper, there are about fifteen per cent. with a history of angina pectoris. These cases are all taken

from private practice, which probably accounts for the higher percentage, according to Osler.

Of this selection, eight cases are submitted, illustrating some of the types of hypertension, with observations and blood pressure readings from time of first examination:

No. 1. Mrs. M. F. Living. Age, 64.

#### Essential or Mild

Examined in March, 1917. Family history negative except one brother died of heart trouble, one sister had nervous breakdown, and second daughter operated on for goiter. Complained of rush of heat and blood to head, which has been occurring for about three years previous. Heart enlarged slightly to left and to right. Liver, two fingers below costal arch. Teeth in poor condition; some extracted in October and more in 1920. Began two hours rest of afternoons in 1924; showed sugar in urine. In 1926 had swelling of ankles and feet. No albumin in urine, but sugar still present; pus cells; no casts. With further restriction of diet showed no sugar in 1927. Feeling very well in April, 1929, with restricted amount of household responsibility.

Blood Pressure		Blood Pressure	
	S. D.		S. D.
1917		1925 (Cont'd)	
March	165 125	November	190 120
October	170 122	1926	
1920		April	210 110
January	220 120	1927	
1923		March	190 106
March	222 120	September	198 106
1924		1928	
January	230 130	January	204 115
1925		February	220 120
February	210 118	April	160 90
May	210 100	May	180 100

No. 3. Mrs. J. P. Living. Age, 58.

#### Nephritis

Albumin present, four plus, in 1917; numerous casts. Functional kidney test: Right kidney, 25%; left, 28%.

Blood Pressure		Blood Pressure	
	S. D.		S. D.
1917		1921	
July	184 122	February	210 120
1918		March	220 120
July	220 140	December	210 120
August	210 130	1928	
		March	170 100

Albumin still present, four plus; many casts.

No. 8. Mr. J. H. C. Living. Age, 78.

#### Arteriosclerosis

Examined in June, 1918. For several years had been slightly overweight. Sugar was present in urine at time he had a carbuncle in 1911. Heart was 14 c. m. to left, mid-sternal on right, and sub-sternal dullness 5 c. m. to left. Had nocturia for many years. Able to be about at present, but quite feeble.

Blood Pressure		Blood Pressure	
	S. D.		S. D.
1918		1927	
June	198 120	January	200 100
September	170 90	1928	
1919		August	170 70
April	170 110		

No. 71. Mrs. G. R. Living. Age 52.

#### Cardio-Nephritis

Examined in September, 1928. Patient overweight, with cardiac symptoms; gas in stomach and abdomen for some time. In June, 1928, started on a trip; short distance from home became very sick, with difficult breathing; couldn't speak, choked and coughed; had severe precordial pains; attack lasted few hours and returned home. While digging and planting flowers, month before, had similar attack which lasted about an hour. History: Has had a weak heart. Formerly weighed 250. Appetite very good. Aching in back of head. Sleeping poorly. Heart is enlarged to left, with diastolic murmur over base. Functional kidney test: 32½%. Patient was placed on diet: P. 50 gms., F. 30, C. 75. Present weight, 181. Total loss of 56 pounds. Has had no re-occurrence of her former attacks of precordial pain and gas distention.

Blood Pressure		Blood Pressure	
	S. D.		S. D.
1928		1929	
September	220 120	February	160 80
October	210 110	March	150 80
October	164 86	April	170 90
November	180 90	May	160 80
December	180 70		

No. 74. Mr. C. M. E. Deceased. Age 60.

#### Malignant or Severe

Examined July, 1925. Age 59. Weight 116. Small stature. Left heart at anterior-axillary line; substantial dullness increased 5 c.m. to left and some to right. Pulsations of carotids very noticeable. Marked evidence of blood vessel sclerosis, including aorta. Teeth in bad condition.

Urinalysis: Sp. Gr. 1008. Albumin and casts present. Under rest and treatment, blood pressure was reduced after a few months. Attack of influenza in February; gradually improved. Symptoms became more grave and entered hospital in July; remained about eight weeks; gradually grew worse; was given liver injections. Died September 1, 1926, symptoms of uremia and cardiac failure. Family were advised at time of first examination that patient would not likely live more than a year. Lived fourteen months.

Blood Pressure		Blood Pressure	
	S. D.		S. D.
1925		1926	
July	230 110	February	240 110
July	186 98	March	220 110
August	230 110	April	228 120
September	210 110	June	200 100
December	238 118	August	230 120

No. 78. Mr. J. F. M. Deceased, age 76.

#### Angina Pectoris—Coronary Occlusion

Examined April, 1922, age 73. Complained of pain around right shoulder. Family history practically negative. No sickness as a child except measles, severe, and occasional attacks of pleurisy, not severe. Had distress in stomach and bowels for many years; had traveled and used restaurants. Of nervous temperament; had financial losses with worry at times. Had nocturia for many years. Arteries moderately sclerosed. Heart enlarged to left and accentuation of second



aortic. No arhythmia. Advised about exercise—golf. Teeth were x-rayed and some extracted. Mild infection of pyelitis, colon bacilli, right kidney. In September, 1922, complained of shortness of breath, especially on exercise. The following three winters were spent in Florida. About three weeks after his return played 18 holes of golf, in a foursome. The following morning had an attack of coronary occlusion and died in spasm three days later. Lived three years after examination.

Blood Pressure			Blood Pressure		
1922	S.	D.	1924	S.	D.
April .....	168	110	April .....	140	86
June .....	170	110	December .....	160	98
September .....	150	100	Died April 16, 1925.		
1923					
December .....	160	80			

No. 26. Mrs. J. L. Deceased. Age, 65.

#### Angina Pectoris—Coronary Occlusion

Examined March 7, 1922.

Family History: Mother died, 72, heart failure; father, 73, heart trouble. At age 18 weighed 113, but gradually increased to 207-218. Active, worked hard, and was nervous. At time blood pressure improved was living in city. Later moved to country residence for about five years; was more active and worked harder. Began rest in afternoons on account of dizziness and shortness of breath; began to be troubled with nocturia. On account of weight was advised to reduce sugar and salt in food. Returned to city home past two years; not under treatment until present sickness, March 23, 1929. After washing and hanging curtains became very dizzy with shortness of breath, gas distention, pain over left chest and radiating to neck and left arm. Blood pressure was S. 220, D. 120. Was removed to hospital for three weeks, but difficult to keep quiet. Returned home April 20 and had attack at four o'clock in the morning, with severe pain in left side and upper abdomen. At eight o'clock pain severe, with vomiting, sweating, and unable to lie down; sat on edge of bed in fixed position. Symptoms continued and only abated by morphin hypodermically. Heart was fairly regular but weak, with symptoms of decompensation; rales at base of lungs. On the evening of April 25, after taking nourishment, she died suddenly. No autopsy held. I believe this case died of coronary occlusion. Lived seven years from time of first examination.

Blood Pressure			Blood Pressure		
1922	S.	D.	1924	S.	D.
March .....	210	110	January .....	150	90
April .....	160	92	April .....	170	90
September .....	200	100	1926		
October .....	180	110	January .....	184	88
October .....	200	90	April .....	210	100
November .....	220	120	1927		
December .....	180	100	November .....	204	96
1923			1928		
January .....	200	100	January .....	178	86
May .....	150	86	1929		
December .....	180	90	March .....	220	120

No. 51. Mr. L. M. Deceased. Age, 65.

#### Myocarditis with Bundle Branch Block

Spent a year at Battle Creek Sanitarium before came under my observation in January, 1921, age 61. On account of shortness of breath and precordial pain, was advised not to play more than one or two holes of golf. Gradually overcame a decompensation by disposing of all his business and devoting himself to the recovery of his health, and could finally comfortably play nine holes of golf. As he improved he became more difficult to control in his exercise and activities, and with a return of an anginal attack he died some hours later while asleep. Electrocardiogram had shown bundle branch block signs three years before. Lived five years after first examination.

Blood Pressure			Blood Pressure		
1922	S.	D.	1923 (Cont'd)	S.	D.
April .....	180	96	August .....	160	100
June .....	140	100	December .....	158	90
October .....	162	102	1924	S.	D.
November .....	150	100	January .....	160	90
December .....	140	100	March .....	164	94
1923			May .....	160	80
February .....	150	100	June .....	160	100
March .....	150	96	1925		
May .....	138	88	December .....	140	90
June .....	150	90			

We have discussed the earliest possible changes in the kidney and elsewhere that may be the beginning of hypertension. May we also consider some of the many causes of the departure from normal health that are probably casual factors in producing these changes that are found in early hypertension.

As Draper has shown that there is definite tendency to inherit heart disease, so there is every possibility that there is a much greater tendency for hypertension to be found in a definite family history.

When we are confronted with a case of hypertension for study, when the physical examination has been done and the laboratory findings completed, we write our conclusions and summary. Not unlike the real pictures upon the canvas,—first there is the definite background, then comes the various colorings and shadings from the blending of the paints that produce outline and form, and the picture gradually appears in reality. So in this clinical picture, we can see the family background with environmental conditions from birth to the age of senescence. When we consider treatment each picture must be studied individually, and frequently the entire background of life's habits repainted or entirely changed and the physician, instead of a painter on canvas, becomes a teacher, thereby changing or repainting the clinical picture.

In the treatment of these cases, I am often reminded of a statement made by S. Weir Mitchell that he had seen few cases of neurasthenia that could not be relieved or cured by a check of sufficient size to make them comfortable.

So with these cases of hypertension, where they can be made comfortable, I am sure we can prolong their lives and make them useful, five to ten years, and even in a few of the early cases, longer. It is the vicissitudes of life from infancy to old age that confronts the hypertensive, that causes him to falter and succumb early or later in his efforts to reach the home port in the good ship Old Age.

Patients that are not improved in both reduction of blood pressure and comfort by physical and mental rest, with suitable diet and sedatives, over a period of six weeks, have progressed to the point of more or less kidney changes or malignant type of hypertension.

Much is said about advising these patients to stop work. If a patient for many years has had yearly or bi-yearly health examinations with close observation, we may safely be more liberal with our advice. The prognosis for a patient with hypertension beyond the sixth decade with a diastolic pressure that can be kept between 90 and 100, with moderate pulse pressure and a well regulated life, may be eight or ten years. This, of course, becomes less in proportion to symptoms of kidney involvement, such as a thalein output of less than 30 per cent. fixed low specific gravity, excessive output at night over the day, as well as increased total amount in twenty-four hours. An additional help will be the entire Mosenthal test, with blood urea and non-protein nitrogen.

*Rest:* Everyone agrees that rest, relaxation, absence from worry, are all necessary and desirable. To succeed with a patient we cannot be satisfied to tell them to rest, to relax, not to worry, to quit business, to turn a deaf ear to all domestic disturbances, but we must help him to approach each of his difficulties separately and after a reasonable analysis to reach a solution that will give our patient rest from both physical and mental activity.

Business associates and members of the immediate family must be admonished to refrain from all sources of irritation and in every way co-op-

erate with the physician. No doubt the character of our advice should depend in these cases upon the time of life and the period of the disease when these patients consult us.

Bishop's warning as to the time of day for exercise is timely and should guide the physician in his advice to his hypertension patients, particularly the cardiac type. The principle that exercise should be taken before the activities of the day and not afterward is an important one, that the patient walks out of doors before noon daily and continues to the point of slight fatigue, with rest from lying down until refreshed after lunch. The hypertensive patient past middle life who takes exercise, golf, etc., after his day's work can benefit little from it.

The physician must have experience and skill in being able to determine at what point of this journey his patient has reached that comes to him for advice. This means that we must know all the earmarks of this disease and the order of their appearance, that we may be able to interpret the manifold symptoms and actually determine at what point of the journey the hypertensive has arrived when we see him. Without this knowledge of our patient we cannot decide as to the amount of rest, work or exercise a patient must have, nor as to diet and medication.

How much rest must we advise for a patient with these symptoms? You want to know his age and weight, blood pressure, condition of heart, kidney function and conditions of environment. I have long been convinced that we frequently see these patients the first time with blood pressures that are moderate, 150 to 160, diastolic about 100, that at an earlier time have been hypertensives.

In these cases where there are symptoms of myocardial weakness, the eye-grounds should be examined for retinitis. Altnow<sup>15</sup> states that "retinitis resulting from hypertension may be indistinguishable from renal retinitis, thus producing certain changes, such as marked papilledema, retinal edema, cotton wool spots and coarse fan and star-formation that suggest renal involvement. In retinitis caused by hypertension, these changes are less frequent, but all may occur. It is suggested that such difference in appearance as exists is probably due to the rate at which the degenerative changes occur." So



we see these cases with chronic myocarditis and only from an examination of the eye, find a retinal arteriosclerosis indicating a previous hypertension.

A careful evaluation of a patient as a surgical risk in all forms of suspected heart impairment from hypertension should be carefully observed by the surgeon.

It should be our effort to treat these hypertensives as expediently as possible, because the earlier cases will require a long time to get them to fit into a proper regime to stay the advance of the disease or hold it in abeyance, and the more severe ones to postpone any of the serious accidents that may cause death or disability, total or partial, that makes life a burden to both the patient and family.

Most that has been advised in the treatment of this disease has been proven worthless. Low protein (no lean meat), salt-free diet, liver injections, spas abroad and springs in our country, have all been highly recommended, only to bring disappointment. As pointed out by Van Norden of Vienna, many years ago, indiscriminate amounts of water drinking, exercise, and bathing which are recommended at these spas, cause many hearts that are compensated to become decompensated.

In advanced or malignant hypertension, a low protein and reduced salt diet is of distinct advantage, but of no material benefit in cases with kidneys showing no albumin, few casts, waxy or granular, with a thalein output of 50 per cent. or better. Those who have tried Major's Liver Treatment, with few exceptions, consider it to be of any distinct value. I have only tried it in my cases that had kidney involvement, with no results.

As stated by Mosenthal,<sup>16</sup> "The best available means at the present moment to reduce the blood pressure in essential hypertension is to obtain nervous relaxation in the patient." As he states, this is glibly said but hard to accomplish, for it means untold effort upon the physician's part and limitless cooperation by the patient. Occupation, home life, social obligations and many other factors must be studied and their rough corners rounded off.

Those who have comfortable means but who have led a life of "hurry and worry" can scarcely be controlled, but can arrange their business

affairs and domestic life so that living is made more comfortable. With one of limited circumstances who has to depend upon their work from day to day to support a family, it is difficult to obtain rest and relaxation, either physical or mental.

There is no doubt of the value of the removal of sources of infection, but this should be advised judiciously. Only one or two of the worst infected teeth should be surgically extracted at one time, followed with rest in bed when there is any tendency to heart impairment or diminished kidney function. Hypertension without these symptoms of heart and kidney is no bar to necessary surgery.

*Treatment:* Rest and peace of mind must be secured if possible. Some of the older remedies are very effective for this purpose, such as S. B., Gr. XV, at 11 A. M., 5 P. M., and 9 P. M., Chloral hydrate, where there is precordial pain, Gr. V to XV, at night, repeated if necessary. Some of the newer drugs, Barbitol Gr. V at 7 P. M., Allonal, two tablets, or Phenobarbital, Gr. 1½, are all effective. For relaxation, morphin, Gr. ⅛, is often found useful.

Blood letting, if necessary, in sthenic cases, with nitroglycerine. Rest in bed, free catharsis, and diet reduced to less than 1000 calories—P. 40, F. 50, C. 75.

Symptoms of heart failure and fibrillation must be treated by digitalis.

When there is edema, Theocin, Gr. 1½ on the first day, t.i.d., five times on the second day, and if no diuresis, six to eight on the third day. Novasural and Ammon. chloride may be tried; 8 gms. Ammon. chl. the day before the Novasural is injected.

Where there is recovery from decompensation this condition can be maintained longer when the patient does not have to work, but it will reoccur again sooner or later with some form of attack of coronary thrombosis that closes the scene, or if only a branch of the coronary artery, a slow recovery (three months in bed) to die later from terminal pneumonia due to decompensation.

There have been some favorable reports of the use of Sodium sulphocyanate in the reduction of blood pressure in hypertension uncomplicated.

A drug that has been used quite successfully with the cardiac complications of hypertension

with severe pain, angina pectoris and its various phases, is Theophylline-Ethylenediamine. This drug was used in 200 cases of heart disease associated with pain, in the clinics of the Charity Hospital, New Orleans, by Drs. Musser and Hermann.<sup>17</sup> This was for the purpose of increasing coronary flow.

Thyroid gland medication is of value, carefully administered, in the obese cases. As stated before, the judicious removal of all foci of infection is important.

#### Conclusions:

1. The so-called essential or benign hypertension is the earliest symptom of a mild hypertension that may become severe under longer periods of observation.

2. In view of the more recent studies it would appear there are more frequently early structural changes found in the kidney and vascular system than had formerly been believed.

3. For this reason, in considering this disease, our attention should be directed to its earliest possible causes and manifestations.

4. We again emphasize the importance of treating the various complications of hypertension the same as when it occurs as a complication of other diseases.

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#### HYPOTENSION\*

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Dr. Munson has just told you of the really extraordinary increase in the expectancy of life, which has been a gift of medicine to humanity in the last quarter century. That has taken place in the face of a decreasing birth rate, and means, of course, that many more people reach middle age.

The ways in which this achievement has been brought about will perhaps give you some clue to the particular phases which I want to speak about today.

The significant decrease in the death rate has been in the group of infectious diseases principally, and the widespread increase in the use of sterilized and pasteurized foods and drinks furnish probably the explanation for this really very remarkable achievement.

If you will stop to think about it, we are rather rapidly approaching the theory, at least, of the perfectly pasteurized man. Our water supplies are sterilized, we eat tinned foods to a considerable degree and there is very little that is not subjected to chemical or heat sterilization or pasteurization.

This has apparently some effect upon the microbes that inhabit the intestinal tract. You realize that an average adult enjoying an average diet excretes some thirty millions of millions of bacteria a day. It may not be without some significance that alteration in food may be responsible for reciprocal effects upon the intestinal bacteria. Before the days of pasteurization the lactic acid bacteria that are very commonly present and abundant in nature were taken with the food and now these organisms are very largely eliminated.

On the other hand, spore forming organisms that can resist pasteurization temperature are disproportionately supplanting the lactic acid bacteria and it is a possible relationship of one of these spore formers to hypotension that I want to direct your attention to today.

If you will think over the cases that come to you as practitioners you will perhaps recall an

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occasional patient who complains of somewhat indefinite symptoms, and these are, first of all, undue fatigue. Also your patient is very likely to complain of constipation; he may waken in the early morning with rather indefinite symptoms of discomfort, and if you take his blood pressure you will very likely find it is rather below the normal for the age.

These persons ordinarily are not particularly ill. They are enjoying what Robert Koch called "a state of rude health."

In a series of some ninety of such cases which I have seen from time to time, I have been able to find an organism whose name you are all familiar with—the gas bacillus: that sinister organism that during the World War caused the gas gangrene. But the one under discussion is not the common, ordinary, garden variety of gas bacillus; it is one that produces a particular sort of chemical substance that, so far as we have been able to identify it, is rather closely related to histamin.

Strikingly enough, this microbe does not produce this substance, which is of protein origin, from purely protein media.

It is produced as a by-product during the active fermentation of sugars, and this is rather significant, in view of the fact that these particular cases I am speaking about are in reality cases of carbohydrate intolerance. It is not carbohydrate indigestion strictly speaking, because there is nothing at fault with the digestion. Rather the condition is attributed to the extraordinary avidity of this gas bacillus for carbohydrate, and the consequent liberation of this histamin-like substance that seems to be responsible for the difficulty.

Experimental evidence of the correctness of the explanation is not difficult to obtain; even extremely small amount of cultures of this microbe injected into the blood stream of suitable animals will cause a depression of blood pressure. If the same substance is added to physiological solutions in which strips of smooth muscle are suspended, these will contract. Not only that, but if this substance (or substances, it may be a composite substance) is added to the mucosa of the small intestine, the small intestine will contract, suggesting that the substance passes through the mucosa to the underlying smooth muscle.

I realize, of course, that these are circumstantial facts rather than definitive proof, but proof in medicine is difficult to achieve.

A word about the conditions under which this gas bacillus thrives in the alimentary canal. In the first place, the gas bacillus is quite sensitive to lactic acid, and, therefore, the deficit in active lactic acid producing bacteria that I mentioned a moment ago seems to be a significant factor. If you were to examine the microbes of the alimentary tract in these cases you would find that lactic acid producing bacteria are limited in numbers and rather sluggish in their activities.

The associated intestinal organisms we are not particularly interested in; they merely bear out the statement I have made.

It is, of course, more or less interesting to speculate upon the origin of cases of this sort, but from the practical point of view, prevention, or, more accurately, amelioration, is of infinitely greater importance. Fortunately, these cases are amenable to dietary treatment.

From what has been said you have already grasped the theory, at least, underlying the handling of these cases from the dietary point of view.

The principle involved is to restrict carbohydrates as much as possible, and to push buttermilk. The term "buttermilk" is, parenthetically, a delicious misnomer. It is milk from which everything that can give rise to butter is eliminated. Also the varieties of buttermilk that may be purchased in one place or another are very numerous. The only buttermilk that is of avail in the particular sort of cases we are considering is that which contains relatively large amounts of preformed lactic acid.

Milk of this sort has two advantages. The first one: the lactic acid, which is already present. And, secondly, the reduction in milk sugar which follows from the fact that lactic acid has taken place.

It is perfectly feasible to make lactic acid milk by the simple expedient of adding lactic acid to it. This is not, however, quite as satisfactory as the soured milk produced by microbial activity. But it is much better than milk which is obtained by the process of sweet churning, which is not only useless, but is actually harmful in these cases of hypotension we are discussing.

I mention this because there is a great deal

written about lactic acid milks of one sort or another, and there is a great deal of misinformation and faddism in the voluminous lactic acid literature.

What is needed is preformed lactic acid to antagonize the growth of the gas bacillus, and when lactic acid milk is administered in considerable amounts the lactic acid gradually crowds out or at least restrains the activity of the gas bacillus and the patient slowly improves.

It is also necessary to reduce as far as may be the carbohydrates in the diet and here may I point out that there seem to be idiosyncrasies to this group of substances. Some persons are tolerant of potatoes and others are tolerant of other carbohydrates. There seems to be no way of predicting, and it is necessary to determine by experiment what the idiosyncrasies are.

The addition of a certain amount of protein to the diet does no harm, and it seems in most instances to be beneficial.

You will, doubtless, find in a proportion of the cases, that the hydrochloric acid of the stomach is either deficient in amount, or perhaps even absent. That is a factor that can be artificially controlled in ways that are perfectly obvious, however.

These cases of carbohydrate intolerance associated with hypotension are usually cases of rather long standing. Some of them have gone on for weeks, months, and years. I have one in mind that was apparently suffering from this low grade derangement for a period of seventeen years. This, of course, indicates that the condition is not deadly. It is one, however, of considerable discomfort.

To summarize all of this, then. There seems to be a group of cases in which there is a rather indeterminate series of symptoms, no one of which is characteristic, but all, taken together, are extremely suggestive.

In a series of these cases it has been possible to find a particular sort of microbe. This microbe produces certain substances which will, when introduced in an appropriate manner into the body, reproduce the essential symptoms which are associated with this condition. This microbe has a perfectly definite series of chemical characteristics; by taking advantage of the likes and dislikes of the microbe it is possible to bring it under control; and when this is done,

the patient undergoes slow but definite restoration to his normal condition.

## HYPERTENSION—CLINICAL INTERPRETATION\*

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Hypertensive states may be classified in several ways, each of which furnish conceptions that are of distinct aid in the diagnosis and treatment of high blood pressure. An elevated blood pressure may be grouped according to its cause, that is, on a physiological or a pathological physiological basis; this, if carefully carried out, does away with the danger, which is a real one, of making the diagnosis of hypertension too simple by quoting a systolic pressure only and thus dividing the human race into three classes, those with an average blood pressure and those with hypo- and hypertension. This is frequently done; it is a quick and easy way to quote a systolic pressure of about 200 and to think of it as signifying potential destruction for such a person in terms of heart failure, apoplexy or uremia. On the other hand, a great deal of skepticism has been engendered in regard to the interpretation of such high blood pressure readings because these patients frequently enjoy their normal allotted span of life in spite of a high systolic pressure. The error lies in the fact that hypertension is the result of many factors which not only have widely different prognostic significance but also require various therapeutic measures if they are to be treated effectively. An analysis of hypertensive states is given in Table 1.

TABLE I—TYPES OF INCREASED BLOOD PRESSURE — PATHOLOGICAL PHYSIOLOGICAL CLASSIFICATION OF HYPERTENSION

- (A) Constitutional, or
- (B) According to the Elvation of Systolic or Diastolic Pressure or Both.
- Group I—Increased Systolic and Low Diastolic Pressure.
  - (a) Large Pulse Volume (heart-block, aortic insufficiency, hyperthyroidism).
  - (b) Loss of Elasticity Throughout a Greater Part of the Arterial Tree (arteriosclerosis, old age).
- Group II—Increased Systolic and Diastolic Pressure.
  - (a) Primary Increased Peripheral Vasoconstriction.
  - (b) Primary Increased Arterial Tone.
  - (c) Combination of (a) and (b).
- Group III—Comparatively low Systolic and high Diastolic Pressure (myocardial insufficiency).

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In this table the pathological physiological classification is intended to clarify the diagnosis and therapy of increased blood pressure. There are two points, especially, that are worth while accentuating, before these conditions are taken up in detail; these are, first, that there are many and diverse causes for the elevation of systolic pressure, and, second, that the diastolic pressure, often not even mentioned in describing hypertensive states, is of equal if not greater importance than the systolic pressure.

Average figures for blood pressure are now available in sufficient numbers to make these observations of permanent value. Tables 2, 3 and 4 are examples of such data.

TABLE 2—BLOOD PRESSURE IN NORMAL CHILDREN. (JUDSON AND NICHOLSON<sup>1</sup>)

Age	Systolic Pressure	Diastolic Pressure	Pulse Pressure
3	91.8	65.6	26.2
4	91.6	64.9	26.7
5	91.3	64.4	26.9
6	92.6	67.3	25.3
7	94.0	66.3	27.7
8	93.6	64.7	28.9
9	94.3	71.0	23.3
10	99.2	67.1	32.1
11	97.1	65.5	31.6
12	102.3	65.2	37.1
13	103.6	70.5	33.1
14	106.1	67.4	38.7
15	105.6	67.5	38.1

TABLE 3—AVERAGE NORMAL BLOOD PRESSURE ACCORDING TO ARTHUR HUNTER<sup>2</sup> IN APPROXIMATELY A QUARTER OF A MILLION HEALTHY INDIVIDUALS

Age	Systolic Pressure	Diastolic Pressure	Pulse Pressure
10	103	70	33
15	113	75	38
20	120	80	40
25	122	81	41
30	123	82	41
35	124	83	41
40	126	84	42
45	128	85	43
50	130	86	44
55	132	87	45
60	135	89	46

TABLE 4—BLOOD PRESSURE READINGS IN MEN AND WOMEN AGE 65 TO 94 ACCORDING TO BOWES<sup>3</sup>

Age	Number Examined	Systolic Pressure	Diastolic Pressure	Pulse Pressure
65-69	32	151	82	65
70-74	39	160	86	73
75-79	38	166	86	79
80-84	27	175	84	83
85-89	7	170	90	77
90-94	7	142	81	61

An easy figure to remember as a guide to approximately normal blood pressure in adults is that at age 20 the systolic pressure should be in the neighborhood of 120 and the diastolic at a level of about 80 mm. of mercury. From a study of tables 2, 3 and 4 it can readily be seen that the popular idea of considering a normal blood pressure as equal to 100 plus the patient's age is fallacious. Furthermore, such a rough and ready rule does not consider the diastolic readings, which from a clinical point of view are of greater significance than the systolic.

Average values of blood pressure as given in tables 2, 3 and 4 do not furnish the upper and lower limits of normal. These are given in tables 5 and 6. It is apparent in these tables that the

TABLE 5—PROBABLE LIMITS OF NORMALITY IN BLOOD PRESSURE READINGS AT VARIOUS AGES (STOCKS AND KARN)<sup>4</sup>

Central Ages	Outside these limits pressures are almost certainly pathological	
	Systolic	Diastolic
7	59-128	34-86
8	62-131	35-85
9	66-135	36-88
10	69-138	38-90
11	72-141	40-92
12	75-144	42-94
13	80-149	45-97
14	84-153	47-99
15	89-158	49-101
16	93-162	51-103
17	95-165	52-104
18	97-166	54-106
19	.....	57-109
20-24 }		59-111
25-29 }	98-167	59-110
30-40 }		55-107

TABLE 6—BLOOD PRESSURE OBSERVATIONS IN MEN AGE 75 TO 92 ACCORDING TO THOMPSON AND TODD<sup>5</sup>

Syst. Press.		Diast. Press.		Pulse Press.	
mm. Hg.	No.	mm. Hg.	No.	mm. Hg.	No.
0-129	15	0-29	3	30-49	8
130-149	31	30-49	0	50-69	35
150-169	23	50-69	22	70-89	32
170-189	20	70-89	54	90-109	17
190-209	7	90-109	21	110-129	7
210-229	1	110-129	2	130-149	2
230-249	2			150-169	0
				170-189	1

These figures show how impractical it is to speak of a normal average blood pressure in people of advancing years; apparently there is a characteristic blood pressure which each individual acquires as he grows older. This may be considered the physiological expression of the changes that occur in the cardio-vascular system of each person.

TABLE 7—BLOOD PRESSURE RECORDS IN A CASE OF CONSTITUTIONAL HYPERTENSION

Blood Pressure		Date	Blood Pressure	
Systolic	Diastolic		Systolic	Diastolic
1912 .....	145 ..	1923, July.....	140	96
1917 .....	142 98	1924, January..	148	98
1919, February.	142 96	October..	148	100
December.	152 98	1925, March...	140	92
1920, June.....	154 100	November	152	100
December.	142 100	1926, April....	152	102
1921, August...	158 104	July.....	146	97
December.	142 98	1927, January..	142	98
1922, September	140 90	October..	154	102
November	150 96	1928, April....	142	101
1923, May.....	160 100	May.....	154	100

Male, age 50; the highest and lowest blood pressure readings of each year are the only ones charted. (Mosenthal).<sup>o</sup>

variations from the average may be very great. This makes it evident that some persons have an arterial tension which is higher than the accepted average standards. An example of this sort is given in table 7. In the present classification such instances have been designated as constitutional hypertension, thus indicating that in these individuals the body is so adjusted that it maintains a rather high blood pressure; one great difference between such instances of constitutional hypertension and the diseased state, essential hypertension, is that the blood pressure remains constant and shows no tendency to rise from month to month or from year to year. These cases of constitutional high blood pressure usually do well and do not have a poor prognosis.

The second part of the classification indicated

TABLE 8—SHOWING THE VARIOUS RELATIONS THAT MAY EXIST BETWEEN SYSTOLIC AND DIASTOLIC BLOOD PRESSURES

Blood Pressure		Remarks
Syst.	Diast.	
230	92	Group 1—Examples of comparatively low diastolic pressure and markedly increased systolic pressure.
184	90	
220	98	
180	95	
225	94	
200	96	Group 2—Examples of simultaneous increase of systolic and diastolic blood pressure.
234	134	
232	132	
200	130	
245	140	
280	136	Group 3—Examples of increased diastolic pressure with a comparatively slight rise in systolic tension; these cases are comparatively rare.
230	135	
170	120	
177	120	
161	120	
190	130	
170	110	

in table I is according to the elevation of systolic or diastolic pressure or both. Table 8 furnishes examples of the possible relation between these factors. A large pulse volume occurring in conditions such as heart block, aortic insufficiency or hyperthyroidism will bring about an increased systolic pressure without influencing the diastolic pressure in an upward direction. Read<sup>7</sup> reports a case of heart block with a pulse rate as low as 28 and a blood pressure reading as high as 240/100. Any pulse pressure above 60 should lead the clinician to suspect either the presence of an aortic insufficiency or of hyperthyroidism. This does not hold true in all instances, but it is a very helpful hint in diagnosing many cases.

When we trace the average blood pressure values from childhood (table 2) through adult life (table 3) to old age (table 4) it becomes very evident that the systolic and diastolic pressures both rise with advancing years. However, they do not increase equally; the systolic pressure rises very much more rapidly than the diastolic pressure; this is very graphically expressed in the mounting difference in successive ages between the systolic and diastolic blood pressure, which is known as the pulse pressure. The very high values of the systolic and pulse pressures in the aged as compared to those in children must be the result of some fundamental changes in physiology or anatomy that are characteristic of growing old. This process begins in the earliest years, as may be noted in table 2. It is believed that the increasing stiffness of the arteries (that is, the tubing which carries the blood from the heart to the peripheral arterioles) brought on by arteriosclerosis is responsible for the rise in systolic pressure with advancing years. The more rigid and unyielding the arteries are the higher the systolic and the lower the diastolic pressure must obviously become. Up to the time when old age is reached the arteriosclerosis develops to about the same extent in everyone; above 60 to 70 years of age, this degenerative process apparently varies a great deal in its intensity in different persons; the great diversity of systolic pressures characteristic of these years indicates this fact. Arteriosclerosis may, therefore, be regarded as another cause for an increase of systolic pressure without a corresponding rise of diastolic pressure, and is so classified in table 1. An ex-



ample of this type of change may be found in table 9.

TABLE 9—BLOOD PRESSURE READINGS, FEMALE, AGE 55

Date	Blood Pressure		Date	Blood Pressure	
1926	Syst.	Diast.	1927	Syst.	Diast.
Aug. 2....	193	77	Jan. 15....	178	80
Sept. 16....	184	93	Feb. 12....	169	68
Oct. 19....	198	88	March 12..	169	69
Nov. 6....	166	66	April 9....	166	72
Nov. 20....	162	70	May 7....	182	79
Dec. 18....	176	78			

Indicating how the systolic pressure may be raised without a corresponding elevation of the diastolic pressure. Such changes are common in cases of arteriosclerosis and in women after the menopause, and are not to be confounded with cases of essential hypertension in which the diastolic pressure as well as the systolic is above the normal.

An elevation of systolic as well as diastolic pressure may be brought about in two ways: there may be a vaso-constriction of the arterioles at the periphery of the arterial tree resulting in an increased resistance to the blood flow, or there may be a primary increase in tone of the larger arteries, followed by a compensatory narrowing of the arterioles. A primary increase in peripheral resistance has heretofore generally been regarded as the cause of the disease usually spoken of as essential hypertension. There are some cases that may definitely be placed in this category. An example of this sort is given in table 10. The clinical characteristics of these

TABLE 10—MRS. N, AGED 64

Date	Blood Pressure		Date	Blood Pressure	
1923	Syst.	Diast.	1925	Syst.	Diast.
Sept. 29..	230	120	Jan. 12..	120	80
Oct. 10..	230	120	Jan. 26..	130	80
Oct. 26..	195	125	Feb. 25..	180	100
Dec. 3...	150	95	Mar. 19..	80	60
1924			Apr. 6...	135	95
Feb. 7...	120	80	May 11..	130	85
Apr. 26..	130	90	June 20..	150	100
June 27..	250	140	Aug. 7...	160	80
July 11..	195	115	Sept. 9...	190	120
July 28..	115	70	Sept. 26..	210	110
Sept. 10..	195	90	Oct. 3...	230	120
Oct. 2...	115	70	Oct. 7...	210	135
Oct. 17..	115	75	Oct. 13..	235	135
Nov. 17..	180	110			
Dec. 3...	120	80			

Subject to sudden fainting spells, has "dead fingers" and "dead toes" at frequent intervals, periodic looseness of the bowels without cause and several attacks of blurred vision. All these facts point to an intermittent peripheral vaso-constriction. This is apparently the cause for the variable blood pressure found in this case. (Data from Dr. I. W. Kingsbury.)

patients are that they exhibit intermittent signs of spasm of the arterioles, such as fainting spells, "dead fingers," "dead toes," diarrhea, blurred vision, asthma, etc. Table 10, for the data of which I am indebted to Dr. I. W. Kingsbury of Hartford, Connecticut, is the very best example of this sort I have seen. It will be noted that the blood pressure varied remarkably in this case, presumably in accordance with the degree of peripheral vaso-constriction existing at any one time.

Various studies of the arterioles in hypertensive states have revealed some very interesting facts. Boas and Frant<sup>8</sup> have shown that in most instances of hypertension the capillary pressure remains normal, indicating that the peripheral resistance is adjusted so that the capillary flow and the blood supply to the tissues is unchanged. The observations of Krogh,<sup>9</sup> Richards<sup>10</sup> and many others demonstrate that the amount of blood flowing in the capillaries of voluntary muscle, kidney and other tissues is directly proportional to their needs, independent to a great degree at least of the blood pressure. Thus the arterioles may be regarded as regulators of the amount of blood flowing to the tissues, their function being to draw upon the potential energy furnished by the arterial pressure. They do not contract simultaneously over the whole body and even if there is the constriction of a large group of arterioles, as occurs during a chill, the blood pressure may not be raised and may even be below its previous level. (Capillary Blood Flow in Man During Fever—read by Frank Fremont-Smith, et al., at the annual meeting of the American Society for Clinical Investigation, 1929.) With these facts in mind, it is permissible to assume that an increased tonicity of the arteries lying between the heart and the arterioles is the probable cause of the sustained increase of both the systolic and diastolic pressures; in other words, that the disease, essential hypertension, is brought about in this way. Essential hypertension may be described as a disease due to an unknown functional disorder, characterized by a progressively increasing elevation of both systolic and diastolic blood pressures; through the mechanical strain imposed by the high arterial tension, secondary changes are brought about in the heart and in the arteries, especially the coronary vessels and the

arterioles of the brain and in the kidneys, which frequently bring about a fatal termination. The disturbed function would appear to lie in an increased tonicity of the arteries and not in the arterioles. An example of this sort may be noted in table 11.

TABLE 11—AN EXAMPLE OF ESSENTIAL HYPERTENSION IN A MAN, AGED 40, IN 1920

Date	Blood Pressure		Date	Blood Pressure	
	Syst.	Diast.		Syst.	Diast.
1919			1924		
Nov. 8..	158	110	Apr. 9...	158	124
1920			June 6...	176	118
June 6...	146	98	Nov. 10..	182	120
Dec. 3....	150	110	1925		
1921			Apr. 6...	188	132
Mar. 25..	154	106	Aug. 10..	194	130
Sept. 27.	156	119	Dec. 23..	198	146
Dec. 10..	170	120	1926		
1922			Jan. 9...	203	154
Feb. 27..	158	106	Mar. 8...	202	134
Sept. 29..	178	130	Nov. 3...	196	128
Dec. 16..	165	124	1927		
1923			Jan. 13..	204	148
Feb. 15..	171	129	July 18..	185	144
Sept. 4..	168	117	Sept. 21..	210	150
Dec. 8...	151	126	Nov. 11..	178	123

The distinguishing features are a high systolic as well as a high diastolic pressure and a constantly rising blood pressure until it reaches levels at which the secondary changes attending essential hypertension are prone to become manifest. (Mosenthal).<sup>6</sup>

At times a peripheral vaso-constriction may be superimposed upon an already existing hypertension and in this way an inordinate rise of blood pressure may be produced. Such an increment in blood pressure is usually very sharp and unexpected. Sometimes it lasts for a short time only; at others, it may be more prolonged. The instance given in table 12 in which a boy of 12

TABLE 12—BOY, AGED 12

	Blood Pressure		Blood Urea N	Remarks
	Sys.	Diast.	mg. per 100 cc.	
1920				
March .....				Pneumonia, mastoid operation, followed by albuminuria and edema.
1922				
Mar. ...	112	84	9.0	
1923				
Jan. ....	114	82	15.0	
Feb. ....	146	110	...	
1924				
Jan. ....	139	112	18.0	
Apr. ...	188	152	20.0	
Apr. ...	250	210	...	
Apr. ...	212	154	33.0	
May ...	202	162	28.0	Kidney decapsulation.
May ....	218	164	32.0	Died.

A sharp rise of blood pressure for no apparent reason in a case of chronic nephritis; presumably, there was marked peripheral constriction especially of the cerebral arterioles as there were repeated general convulsions to which the patient finally succumbed; the very high diastolic pressure is worth noting.

exhibited a sudden enormous rise, especially in the diastolic pressure, which attained the scarcely believable level of 210, is a very instructive example of this sort. In this case the peripheral vaso-constriction persisted and apparently was the cause of death through successive convulsive seizures brought on by cerebral anemia. A somewhat similar case, and one that has been very carefully worked up, is that of Oppenheimer and Fishberg.<sup>10</sup> In their patient the convulsions and rise of blood pressure were repeated at longer intervals and did not cause death; in this instance evidently the peripheral vaso-constriction was of an intermittent type and consequently was not fatal, as in the boy recorded in the table above.

Finally, there are some cases, which are rather uncommon, that have a comparatively low systolic pressure where the diastolic pressure is high. This is an indication of myocardial insufficiency and should be regarded as a danger signal of a failing heart. It is especially in older people that this phenomenon has to be watched for.

If we recognize that in all the various hypertensive states classified and enumerated above there is only one, that is essential hypertension, that is of serious importance, it may be worth while to consider this particular form of increased blood pressure a little further. As previously stated, essential hypertension may be considered a form of increased blood pressure brought on by an increased tonicity of the arteries and characterized by a rise in both systolic and diastolic pressure, which may bring about a fatal termination through the effect of the elevated arterial tension has upon the heart and the arterioles of the brain or kidneys. A possible classification of the forms which essential hypertension may assume are given in table 13.

TABLE 13—CLASSIFICATION OF ESSENTIAL HYPERTENSION

- (A) Anatomical Classification, According to Secondary Lesions:
  - 1—Cardiac,
  - 2—Cerebral Arteriosclerosis,
  - 3—Renal Arteriosclerosis.
- (B) Classification According to Height of the Diastolic Pressure and Severity of the Secondary Lesions Irrespective of Organ Involved:
  - 1—Mild (Benign) Hypertension,
  - 2—Severe (Malignant) Hypertension.



The various lesions and their frequency entailed by hypertension are briefly expressed in table 14. The importance of hypertension as a

TABLE 14—RESULTS OF PROLONGED ELEVATION OF BLOOD PRESSURE

Lesions Resulting from a Persistent Hypertension	Cause of Death	Approximate Pct. of Deaths in Hypertensives
Heart		
Hypertrophy Dilatation	Myocardial insufficiency	60
Coronary Arteries		
Arteriosclerosis Myocardial degeneration	Angina pectoris, Myocardial insufficiency	
Brain		
Arteriosclerosis Arteriolosclerosis	Cerebral haemorrhage, Encephalomalacia	20
Kidney		
Arteriosclerosis Arteriolosclerosis	Renal insufficiency Uraemia	10

A prolonged elevation of blood pressure, especially diastolic pressure, results in arterial degenerations throughout the body and in cardiac insufficiency; some of these secondary lesions apparently never become serious, while others assume such proportions as to be a common cause of death; the above table presents the salient facts; whenever hypertension exists these changes are inaugurated, how rapidly and in which organs they progress depends upon the inherent quality of the individual tissues, as well as the degree of blood pressure elevation, especially the diastolic pressure.

cause of death has probably been underestimated thus far. Fahr<sup>11</sup> has recently calculated that about 25 per cent. of all deaths in persons 50 years of age or older are due to hypertension. It is desired to call attention to the fact that approximately 60 per cent. of these cases succumb to cardiac disease; if this fact is borne in mind, prophylactic measures to forestall myocardial insufficiency may often prolong life for a considerable period.

Finally, a word may be said in regard to the classification of essential hypertension according to the severity and character of the secondary lesions. Cases of essential hypertension have been divided into "benign" and "malignant" categories on at least three different bases. At least two attempts have been made to differentiate hypertensive conditions as "benign" or "malignant" according to the lesions engendered in the kidney. Very recently Keith, Wagener and Kernohan<sup>12</sup> have again called attention to what they describe as a "malignant" form of hypertension. They describe this as a clinical

state characterized largely by a typical retinitis associated with marked hypertension and adequate renal function. Reading between the lines of their article, it seems to me that they would agree in concluding that it is logical to classify essential hypertension as mild and progressive, or severe. The terms "benign" and "malignant" are for obvious reasons a little forced in this connection. It is logical to classify all cases of essential hypertension either as mild or severe, whether the termination is through cardiac, cerebral or renal disease. Every patient with a diastolic blood pressure persisting at a level of 130 or higher should be regarded as an example of severe essential hypertension and the prognosis considered to be exceedingly grave.

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DISCUSSION OF PAPERS ON HYPERTENSION AND NEPHRITIS

Dr. Charles A. Elliott, Chicago: At this time we little realize that the taking of blood pressure is a relatively modern achievement in clinical medicine. Gartner about 1902 developed the first instrument that was clinically applicable. Its use was restricted to a few clinical centers for a good many years. As a matter of fact, our whole idea as to the value of estimating blood pressure in clinical medicine has developed in the past twenty years. During this time our interest has been centered on the clinical interpretation of hypertension. We are just beginning to realize that hypotension is almost, if indeed not as important, as hypertension and has very important clinical bearings on many abnormal processes.

I must confess that I am much confused as to the interpretation of phenomena produced by both

hypertension and hypotension and also confused as to a rational plan of treatment of these conditions. Very little progress has been made in the treatment of hypertensive states in spite of the great amount of work that has been done in this field.

The observations on the effect of salt metabolism in hypertension persist in attracting our attention. Allen, as you know, has championed the beneficial effect of limiting salt in the treatment of hypertension, and in the literature you will find men who repeatedly bring out the question as to the effect of sodium chlorid on hypertension.

I think our lesson from this should be that hypertension is probably affected by some, as yet little understood, chemical reactions, some of them probably induced specifically by salt.

I am interested in hearing Doctor Mosenthal mention the association of duodenal ulcer and hypertension. The depletion of the chlorides of the blood is known to be effective in reducing hypertension in a few cases of hypertension associated with pyloric obstruction in which patients by vomiting reduce the supply of chlorides from the body.

Such a case recently observed in our work was a woman who had been for many years under observation with hypertension and who had a known peptic ulcer at the pylorus. She finally developed complete pyloric obstruction with vomiting of quantities of highly acid gastric secretion. Hypotension resulted and continued for a long period of time, her clinical condition being maintained otherwise fairly normal by rectal feedings. In her case hypertension became reestablished following a gastro-enterostomy. Therefore, salt, representing one of the features of a general chemical change in the body probably has something to do with the determination of hypertension.

The very interesting work that Dr. Kendall has presented to you this morning is another evidence of the chemical background that is associated with hypotension.

I was much interested in Doctor Mosenthal's careful clinical analysis of the whole problem. It is to be remarked, however, that classifications after all represent our present knowledge of a disease. We see clinical variations and our tendency is to classify them into different groups, often confusing rather than clarifying the problem.

I believe a real clarification of this problem will not come until we know the true etiology—not only the effects of pressure substances, but also those which produce hypotension, and until that time comes our mind probably will not be clear either as to the etiology or as to the treatment in these variations from the normal blood pressure levels.

Dr. R. O. Stites, Industry: I was certainly very much interested in the talks by these two very learned men, who tell us about hypertension and hypotension. The only benefit we can get out of our scientific meetings is what will be passed on to the general practitioner and to the public. As the doctor very well said

hypertension apparatus has only been in use about twenty years, and it is undecided what benefits come from it.

Dr. Mosenthal in his paper showed what harm can be done by the general public knowing what is supposed to be normal and what is abnormal, because his figures show, we do not know any definite figure for all people. It is unfortunate that at county fairs, at schools and at universities people can go into a place and very hurriedly have a blood pressure taken, and have written on a piece of paper their exact status as to their health, from a blood pressure standpoint and take the reading with them to worry about. Personally I think that sort of thing does harm. Organized medicine and all practitioners ought not take part in any such thing, but should use their efforts to have it discontinued as a menace to the welfare of the people.

Dr. L. H. Sloan, Chicago and Aurora: One of the valuable things which has come out of the study of hypertension has been the decreasing frequency with which we make the diagnosis of uremia and the increasing frequency with which comas are diagnosed as being due to other conditions besides uremia.

If we will bear in mind that the diagnosis of uremia is a relatively rare diagnosis and that the examination of the blood content, as well as the examination of the urine, is of importance in the diagnosis of uremia, we will have learned something from the study of hypertension.

Those cases which Dr. Mosenthal brought out as being cases of intermittent vaso-constriction with hypertension coming on suddenly correspond probably to the cases which are being written up in the literature now as paroxysmal hypertension, which may occur in various types of renal conditions and other vascular conditions. Those are the types of cases which the older practitioner has well known respond promptly to vasodilators and to bleeding, whereas, the persistent type of hypertension, unassociated with that intermittent variability, rarely responds to even continuous administration of vasodilators.

One point about the variation in pressure: Of course, Draper has brought out the constitutional variation of many things, but it struck me that when a patient twenty years of age has a systolic pressure of 167, we are stepping up pretty high on the limits of possibility. It corresponds to a patient who might be seven feet and a half tall—we would not call him normal, exactly—so that to say that a patient who has a blood pressure of 167 systolic, and a high diastolic incidentally, is perfectly normal, seems to me to be stretching the question quite a bit. True, it seems obvious from the study of large statistics that there are patients who have high blood pressure at relatively young ages who are perfectly normal, a fact which has not been appreciated so much before.

In the prognosis of hypertensive states, also, one ought to say a word as to further studies in connection with other features which may give prognostic



import. As for example, electrocardiographic tracings as to the myocardial efficiency of the particular patient, ophthalmoscopic findings, etc.

I was glad to note that both Dr. Mosenthal and Dr. Munson brought out the fact that the diastolic pressure is, after all, the important pressure, for the myocardial changes and the cerebral changes and the renal changes in the vast majority of instances go along, hand in hand with the persistency of the hyperdiastolic pressure, rather than with the elevation of the systolic pressure, and if you will notice, his third group, with a relatively low systolic, but with a very high diastolic, was the group that gave much myocardial disturbance.

Some of us have believed that the accentuation of an aortic second tone persists over a longer period of time than we give it credit for, and that a patient who exhibits a prolonged and accentuated aortic second tone very definitely accentuated, even in the presence of his low blood pressure, is apt to be a person who has previously had a hypertension which for some reason or another is now at the particular time down.

One thing else that perhaps should be brought out, and that is that there is no reason why we should not all learn to use ophthalmoscopic examination—more frequently than we do, and to examine eye-grounds, or learn to examine them, just as much as we take blood pressure.

Dr. Kendall's work exhibits something rare—that is to say, the close cooperation between the laboratory worker and the clinician with the development of something of value as a result of the work of a broad-minded laboratory worker.

Dr. Angelo S. Geraci, Chicago: In reference to the question the doctor just asked, in this crude preliminary effort no attempt was made to draw any conclusion from this. We do not attempt to state whether that was due to the administration of sodium bicarbonate or not.

### LEAD POISONING; WITH AN ANALYSIS OF EMPLOYEES OF AN ENAMELING PLANT\*

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Several cases of lead poisoning were seen by the writer (W. P.) within a rather short period of time—all the cases being employed in one enameling plant. It was thought that an examination of the employees of this plant, especially with the view of determining potential lead poisoning cases, might be of interest. The purpose of this paper, therefore, is to review briefly the

subject of lead poisoning and to present the results of this investigation.

There are few, if any, diseases that have the large number of contacts with all branches of our profession as has the one under discussion. It is of interest to the specialist in industrial diseases because of the great hazard it presents in over one hundred and fifty industries. It is of interest to the surgeon—principally on account of diagnostic problems it presents and to the general practitioner because of the possibility of its occurrence in the ordinary routine of daily life—even in the home. The neuritides and encephalopathies intrigue the neurologist. There have been a large enough number of cases reported in children to enlist the interest of the pediatrician, and the blood changes, kidney involvement and many other features are of interest to those in general medicine.

Hoffman<sup>1</sup> states that there has been a decline of from forty to fifty per cent. in the death rate from lead poisoning in the last decade. While lead poisoning in fatal form does still occur—chiefly in the painting trades, there undoubtedly has been a marked decrease. We are concerned, however, with morbidity as well as mortality and there is still much loss of time of workmen. Moreover, it is difficult to determine the actual number of cases, due to the lack of uniformity of state laws. In states where lead poisoning is compensable there doubtless is a tendency toward a larger number of cases. Again the differentiation between lead absorption and lead poisoning and the question as to whether state laws contemplate compensation for absorption cases further confuses the question.

Neiswander and Hayhurst<sup>2</sup> state that for the two and one-half year period ending December 31, 1927, there were reported to the Ohio State Department of Health a total of four hundred and fifty or a yearly average of one hundred and eighty—as compared to a yearly average of eighty-eight for the preceding five years. An increase of one hundred and three per cent. It would thus appear that while fatal cases have decreased in number, the non-fatal cases have increased in Ohio.

Of the cases reported in Ohio (last report),<sup>3</sup> twenty-one were in the enameling industry and seven of these were in women.

It has been stated that women are more sus-

\*Read at annual meeting of Illinois State Medical Society at Peoria, May, 1929.

ceptible to lead poisoning than men.<sup>4</sup> Alice Hamilton<sup>5</sup> states that in the pottery and allied industries in the United States, the incidence is one to seven among women as contrasted to one to twelve or thirteen in men. The number of cases reported in women would necessarily be smaller than that reported in men, as fewer women than men are employed. It is probably true, however, that women develop lead poisoning following shorter exposure than do men.

Charles McKhann<sup>6</sup> finds that lead poisoning is of relatively frequent occurrence in children and has usually been associated with pica or perverted appetite.

The clinical picture of lead poisoning is a varying one. Many persons exposed to lead poisoning have constipation and other mild gastro-intestinal symptoms. It is probable that many of these persons upon careful examination would show lead absorption as disclosed by some stippling of erythrocytes and lead in the urine. Such cases cannot be properly labeled lead poisoning yet they occupy a stage where prophylactic treatment is of great importance.

The onset of symptoms of lead poisoning is signalized, with greatest frequency, by abdominal pain, lead colic. The pain is general but most pronounced in the umbilical region. An explanation that has been offered for this pain is that it is due to irritation of the ending of the vagus fibres, giving rise to a spasm of the intestinal muscles. Constipation is always present and vomiting, eructations and other digestive manifestations are frequent concomitant symptoms.

Marked lead palsies are not frequent in cases diagnosed early and removed from the influence of lead. A slight sense of weakness in wrists, ankles and shoulders is frequently present. The typical palsy when present affects most commonly the peronei and extensors of the toe and the extensors of fingers and wrists.

Encephalopathies are not of frequent occurrence but are of bad prognostic significance. There were several extreme cases of very rapid development in the tetra-ethyl lead industry. Cardiovascular involvement, hypertension and arterio-sclerosis are frequently present in old lead workers.

The kidney may be involved both by toxic destruction of epithelium of the tubules with symp-

toms of nephrosis, and as a glomerular nephritis with hypertension and nitrogen retention.

In the diagnosis of lead poisoning the clinical picture and laboratory examination are both of great importance. In a patient with constipation and abdominal pain who is known to be exposed to lead, intoxication from lead should always be suspected and ruled out. If there is present a lead line on the gums and stippling of the erythrocytes, lead in the urine and a slow hard pulse, the evidence is conclusive. It is the slow hard pulse that is of greatest importance in the differentiation between lead poisoning and acute appendicitis, ruptured duodenal or gastric ulcer and other acute abdominal conditions. The occurrence of other diseases with lead poisoning may create a difficulty in the proper evaluation of the symptoms and management of the case as the following case will illustrate:

W. D., female, age twenty-three years. Has been married. No children.

Occupation: Sprayer in an enameling plant.

Family History: No facts of importance.

Previous Illness: Had "dropsy" at age of ten. Denies venereal disease.

Present Illness: For past two weeks has had cramps in abdomen and marked constipation, some pain in long bones, and moderate weakness in wrists. Vomited several times at onset of symptoms and occasionally since. The abdominal cramps became much worse today.

Examination:

General: Well-nourished young adult, female. In bed—evidently in pain. The breath has a foul odor. Temperature, 99; pulse, 80; respiration, 20. Blood pressure, systolic 116, diastolic, 61. No skin lesions.

Head and Neck: Some coagulated blood in nose. Patient states that she has always had some trouble breathing through nose and has not worn her respirator regularly. There is turgescent rhinitis. Tongue fairly moist but thickly furred. There is a dark bluish line along gum margins, a typical lead line. Tonsils normal. Pyorrhea. Some caries of teeth. Thyroid not enlarged.

Chest: Heart. There is a faint systolic murmur heard over base. Area of cardiac dullness normal.

Abdomen: No localized tenderness. Moderate rigidity of muscles. Spleen not palpable. Area of liver dullness not increased.

Nervous System: Pupillary, tendon and superficial reflexes normal. No Babinski, Gordon or Oppenheim. No Romberg.

Muscular Power: There is a slightly diminished ability to extend hands and a slightly decreased ability to extend feet.

Blood: Hemoglobin, 65%; erythrocytes, 3,580,000;



leucocytes, 14,700; polymorphonuclear leucocytes, 80%; lymphocytes, 20%. Stippled erythrocytes present in moderate number. Moderate polychromatophilia and achromia. Blood Wassermann four plus. Two antigens.

Urine: No albumin or sugar, numerous pus cells with some clumping; epithelial cells; occasional hyaline and granular casts; lead positive.

In such a case it is necessary to treat the lead poisoning before beginning anti-luetic treatment—because the kidneys show some effects of the lead.

There is not a complete unanimity regarding the evaluation of the blood findings in lead poisoning. B. Kogan and L. Smurnowa<sup>7</sup> state that the appearance of basophilic granules must be regarded as practically specific for workmen in the lead industries. Ehrlich, Grawitz<sup>8</sup> and others maintain that basophilia is diagnostic of plumbism, anything over one hundred basophiles per one million red corpuscles being regarded as absolute proof of lead poisoning. L. I. Harris<sup>9</sup> in one hundred and three active cases noted absence of basophilia in eighty-eight per cent. G. M. Kober and W. C. Hanson<sup>10</sup> report that in fifty per cent. of a large number of cases of plumbism at Massachusetts General Hospital, basophilic granules were absent. Kjer<sup>11</sup> believes that in cases showing one thousand cells with basophilic granulation per million erythrocytes, there is danger of intoxication and that subjective symptoms do not usually develop until this limit is reached.

McCord, Minster and Rehm<sup>12</sup> devised a method by which the basophilic material is clumped in the red cell—the so-called basophilic aggregation test. This is accomplished by causing hemolysis of the red cell prior to staining. The stain used is Manson's methylene blue. The stain is diluted with distilled water until it is transparent and the unfixed slide is stained for ten minutes. With this slow staining, hemolysis occurs before staining. It is this method that we have employed.

Anemia is usually present in lead poisoning but it most often is of moderate degree. In one hundred and fifty cases of undoubted lead poisoning reported by Seitz,<sup>13</sup> only twenty-three and nine-tenths per cent. presented a hemoglobin (Sahli) below sixty-four.

There is likewise a lack of complete accord as to the value of lead in urine in suspected cases. Lt. Comdr. Brown<sup>14</sup> reports that of twenty-six

cases of active plumbism, lead was found in the urine in all save one. Norman Gwyn<sup>15</sup> states that the examination of the urine for lead must remain as the final determining proof of lead absorption. In marked contrast is the conclusion of Kehoe<sup>16</sup> and others that there is no diagnostic value in qualitative lead determinations in the excreta of persons suspected of having lead poisoning.

The lead line on the gums when present is of great value in diagnosis but often is not present in the positive cases, being found usually in cases presenting pyorrhea. Fetor ex ore has no definite value in diagnosis of plumbism. It is, as has been said, an indication of a neglected mouth—rather than of lead poisoning.

While weakness of the extensors of wrist and ankle are not infrequently concomitants of lead poisoning, typical wrist and foot drop are not found as commonly as formerly, due, we believe, to the earlier diagnosis.

Cerebral manifestations of lead intoxication are not common. It is said that the severe central nervous system symptoms are more commonly found in negroes and women.

The scope of this paper does not contemplate a recital of all the causes of lead poisoning; but, in addition, to the one hundred and fifty industries in which it has occurred, a large number of non-industrial conditions have operated in its causation. Worthy of mention, however, is the study of Wright<sup>17</sup> and others of one hundred and two lead conducted water supplies. These investigators found that all the water of such supplies contained lead. Two hundred and fifty-three persons exposed to this water were studied and sixty-three or 24.9 per cent. were poisoned. It also is considered timely to refer to the case reported by Knowlton<sup>18</sup> caused by siphoning wine—the hose used being shown to contain lead; and the case reported by Vaughn<sup>19</sup> from drinking "moonshine" whisky. Numerous cases have also been reported from the use of snuff<sup>20</sup>. Many cases have been reported in infants and children—caused by lead nipple shields<sup>21</sup>, lead toys and pica.<sup>22</sup>

The industries, however, furnish the larger number of cases, and it is with a view to possible assistance in this problem that this study of an enameling plant is presented.

The plant whose employees were examined is

an enameling plant devoted to the enameling of stove parts. All of the employees, numbering thirty-six, were examined, of whom three were office workers. The enamel used—so we are informed by the manufacturers<sup>23</sup>—has the lead added as the oxide  $PbO$  or  $Pb_3O_4$  or as the carbonate  $2 PbCO_3 \cdot Pb(OH)_2$  and the compounds formed are lead boro-silicates. Prior to spraying, the metal is subjected to a so-called pickling process in which it is treated successively with sulphuric acid solution, soda ash solution and mild borax solution. The enamel is sprayed on the metal by means of spray guns with an air pressure of about fifty pounds at the nozzle. The sprayers are in booths, having individual DeVilbiss exhaust fans and each sprayer is furnished with a Cover respirator with instructions to wear it at all times while spraying. For the most part this instruction is complied with. All employees were familiar with the fact that a lead hazard was present. Most of them professed to washing their hands thoroughly with soap before eating. The number of baths taken weekly varied from one to seven.

Each employee was given a general physical examination and was carefully questioned to elicit symptoms of lead poisoning. The laboratory work consisted of a hemoglobin determination (Dare) and erythrocyte count, a routine chemical and microscopical examination of the urine and an examination of blood to determine the number of basophilic aggregations. Basophilic material, it will be remembered, is a characteristic, the most uniform one, of young erythrocytes. An increase of basophilic aggregations will be found, therefore, in severe anemias. An increase is found also in benzol and arsenic poisoning, and there may be a slight increase following exposure to ultra violet rays or x-rays, and slight increases have been observed in pregnancy and some other physiologic conditions. We feel that it has been well proved that the qualitative demonstration of lead in feces and urine is not of diagnostic value in determining lead poisoning and these tests were not made. The method of recording basophilic aggregations described by McCord and others was used. One plus indicates few cells containing basophilic aggregations on entire slide. Two plus, an average of one basophilic aggregation in every field. Four plus, four basophilic aggregations in ap-

proximately every field. Six plus, six basophilic aggregations in approximately every field. Ten plus, ten or more basophilic aggregations in every field. It was concluded by the above investigators that two plus is the upper limit for normal persons. If the result is four plus or more it was considered suggestion of lead poisoning and treatment was instituted if the result was six plus or more. All of their cases of definite lead poisoning showed a basophilic aggregation of ten plus or more with the exception of three cases.

Since the original report of McCord and others, the value of the basophilic aggregation test has been further demonstrated by an examination of one thousand and forty-five persons, the results of which are embodied in Bulletin No. 460 of the U. S. Bureau of Labor Statistics.

Of the thirty-six employees examined by us, thirteen had a basophilic aggregation test of plus ten. Eight had plus six. Nine had plus four. Three had plus three. Two had plus two. And one had no basophilic aggregation. It is interesting to note that the only employee showing no basophilic aggregation had been employed at this plant one week only. Thirteen cases showed anemia—most of these, however, were slight. One case (No. 10) had a hemoglobin (Dare) of forty-nine per cent. This case gave an interesting history. She began work in this plant in October, 1928; after eleven weeks of work, she stopped on account of illness; her symptoms were general aching, nausea, colic, pallor, weakness and lead line. She was told that she had lead poisoning and had only returned to present employment two days before this examination. Sixteen cases had pyorrhea. Although thirteen of the employees examined were females, pyorrhea was present in only three of them.

In the course of the examination many defects were discovered. Two cases had diseased tonsils. Five had skin diseases, as follows: Two acne vulgaris, one psoriasis, one scabies and one pronounced ichthyosis. The latter case gave a history of meningitis at age of two and one-half years. One case presented clinical evidence of gall bladder disease and another a history of an attack diagnosed as cholecystitis. Two cases presented evidence of diseased hearts; one of these had blood pressure of systolic, 186 diastolic, 94



had cardiac hypertrophy; the other a systolic murmur at apex transmitted to left, with a slight cardiac hypertrophy. There was one case of hyperthyroidism, and three cases presented a glycosuria, while three cases presented pyuria. There was one case of almost complete deafness and one of moderate deafness. One case had no vision in right eye (due to accident in childhood) and another a deformity of left pupil from accident—with poor vision in left eye. One tumor of right inguinal region and one hernia were discovered. One patient, a girl, had evidence of operation of the left hand and marked atrophy of left breast and arm. She stated that a diagnosis of sarcoma had been made and operation was for that condition several years prior to our examination. She also stated that the atrophy followed X-ray treatment and there was ample evidence that she had received such treatment. This does not include all abnormalities discovered in this work, but is sufficient to demonstrate the large percentage of supposedly normal individuals that are abnormal and, further, such facts should impress upon the employer the great risks he assumes when he employs people without requiring a physical examination.

The results of our study are embodied in the following tables:

Table 1 is made up of the cases with basophilic aggregation of ten plus or higher. In several instances there were a very large number of aggregations.

Several interesting facts are disclosed by this table. The average length of employment of this group is four and eight-tenths years. Five disclosed a lead line on the gums—three had ab-

normal urines. Nine had anemia. The average age of the group was 35.14 years and the average blood pressure was systolic, 142, and diastolic, 82. There were four in which the blood pressure was definitely high. It will be noted that only three of the cases were employed as sprayers. This is of interest because all of the sprayers were females, save one, and it has been said that females are more susceptible to lead poisoning than males. Two factors must be considered in this connection, however—first, the protection afforded the sprayers in this plant is excellent; and second, the average time of employment of the female sprayer group examined is about four months. The single male sprayer had been employed six years. He gave a history of previous lead poisoning and at our examination showed basophilic aggregation greatly in excess of plus ten. Four cases in this table presented constipation. This table discloses the fact that in this plant, length of time employed was of greater importance than the type of employment, in so far as evidence of lead absorption is concerned.

Table 2 (page 418) comprises the cases with a basophilic aggregation test of plus six.

The average time of employment in this group is 1.87 years. The average age of employees is 29.8 years and the average blood pressure of the group is systolic, 129; diastolic, 78. Case 19, found in this group, gave a history of lead poisoning one year ago, and at our examination had headache and presented a suggestion of a lead line—the only one in this group. One case in this group disclosed a moderate anemia. Four of the group are burners or burners' helpers.

TABLE 1.

No.	Sex	Age	Occupation	Time Employed—Years	Lead Line	Pyorr-hoea	Anemia	Urine	Blood Pressure	General Symptoms
4	F	18	Sprayer	0.5	0	0	Slight	hy. & gr. cast—tr. albumin	124/86	Slight constipation—headache.
7	F	21	Brusher	6.5	0	0	Slight	Negative	130/70	None.
13	M	30	Sprayer	6.0	Sl.	0	Slight	Negative	140/80	Patellars sluggish—headache—pain in left shoulder.
15	M	64	Sorter	5.0	Sl.	Yes	Mod.	hy. cast f. tr. albumin	186/94	C. V. R. disease—emphysema.
16	M	62	Mill operator	6.0	Yes	Yes	Mod.	Negative	142/76	Weakness legs—slight colic—dizziness—headache—tremor—dyspnoea.
18	M	16	Trucker	0.5	Sl.	Sl.	Slight	Negative	116/72	Acne—spongy tonsils.
20	M	38	Burner	5.0	Sl.	Sl.	0	Negative	124/86	Acne—headache.
22	M	25	Burner	5.0	0	0	Mod.	Negative	134/86	History of cholecystitis.
25	M	33	Laborer	4.0	0	Yes	0	Negative	132/74	None.
26	M	45	Burners' Helper	5.0	0	Yes	0	Negative	154/80	Sys. murmur at apex—Cardiac hypertrophy.
27	M	26	Burner	6.0	0	0	Sl.	Negative	174/78	Tremor—tachycardia—Enlarged thyroid.
32	F	39	Office Manager	5.0	0	0	0	Negative	130/84	Unoperated appendicitis one year ago.
36	M	40	Foreman Sprayer	8.0	0	0	Mod.	Cast	162/106	Rheumatic fever three years ago.
AVERAGE 35.14				4.8					142/82	

TABLE 2

No.	Sex	Age	Occupation	Time Em- ployed— Years	Lead Line	Pyorr- hoea	Anemia	Urine	Blood Pressure	General Symptoms
2	F	18	Sprayer	0.5	0	0	Mod.	Trace sugar	116/64	None.
8	F	20	Brusher	3.0	0	0	0	Negative	130/70	Headache—menses normal—no pain.
14	M	27	Shipping clerk	6.5	0	0	0	Negative	140/78	Faint systolic murmur at base—no enlargement.
19	M	39	Burner	3.0	Sl.	Sl.	0	Negative	124/86	Lead poisoning one year ago—headache.
21	M	49	Burners' Helper	0.67	0	Sl.	0	Many leuco- cytes	132/82	Dyspnoea—pain in knee and in gall bladder—tonsillitis.
23	M	27	Burners' Helper	0.4	0	Sl.	0	Negative	136/78	None.
28	M	27	Burners' Helper	0.75	0	0	0	Negative	126/84	None.
29	M	32	Pickler	0.1	0	0	0	Negative	132/82	Pain in knee from previous rheumatism.
AVERAGE 29.8				1.87					129/78	

Table 3 consists of those cases in which the aggregations were plus four. was systolic, 115; diastolic, 74. There were no lead lines in the group and one case of slight

The average age of this group is 28.5 years; anemia (hemoglobin, 65 per cent; erythrocytes, 4,170,000).

TABLE 3

No.	Sex	Age	Occupation	Time Em- ployed— Years	Lead Line	Pyorr- hoea	Anemia	Urine	Blood Pressure	General Symptoms
6	F	19	Sprayer	0.46	0	0	0	Negative	130/80	Weakness—constipation—colic—menses normal.
9	F	16	Dryer	0.008	0	0	0	Negative	122/80	None—menses normal.
10	F	29	Sprayer	0.005	0	Sl.	Mod.	Tr. Sug.	116/80	Palpitation—menses normal.
11	M	40	Sand Blaster	3.0	0	0	0	Negative	102/64	Rare headache.
17	M	32	Mill Operator	2.0	Sl.	Yes	0	Sugar ++	152/100	None—states health excellent.
24	M	35	Inspector	5.0	0	Yes	Sl.	Negative	140/84	Pain in knee—ichthyosis.
30	M	35	General Utility	2.5	0	Sl.	0	Negative	134/84	Transient headache.
33	F	20	Stenographer	2.0	0	0	0	Negative	110/72	Tremor—pain in knee all life—headache—menses normal.
34	M	31	Manager	8.5	0	0	0	Negative	132/76	None.
AVERAGE 28.5				2.6					126/80	

years. The average blood pressure of the group is systolic, 126; diastolic, 80. There was one lead line in this group, in a mill operator, who had been employed two years. His blood pres-

Table 5 comprises control cases in which basophilic aggregation tests were made.

It is interesting to note that No. 7 of this group was undergoing treatment for lues at time

TABLE 4

No.	Sex	Age	Occupation	Time Em- ployed— Years	Lead Line	Pyorr- hoea	Anemia	Urine	Blood Pressure	General Symptoms
12	F	34	Dryer	0.67	0	0	Slight	Negative	140/100	None
31	M	39	Burner	2.5	0	Yes	0	Negative	126/74	Headache—asthenia
35	M	33	Supt.	7.0	0	0	0	Negative	118/84	Headache—pain shoulder—numb. legs—swelling feet.
1	F	23	Sprayer	0.43	0	Yes	0	Occas. hyal. cast	116/70	Symptoms suggestive of duodenal ulcer
3	F	19	Sprayer	0.83	0	0	0	Negative	80/50	None
5	F	17	Sprayer	0.02	0	Sl.	0	Negative	108/66	None
AVERAGE 27.5				2.9					115/74	

sure was systolic, 152; diastolic, 100. This case also had a moderate glycosuria.

Table 4 comprises the cases showing aggregations of three plus and less.

The average age of this group was 27.5 years and the average length of employment was 2.9 years. The average blood pressure of the group

of examination, an arsenical being used in the treatment. This was the only case showing ten plus. In numbers four, five and six, there was a question of lead exposure in occupation.

Comment: The employees of a small enameling plant were examined with the purpose of determining the number of basophilic aggregations



TABLE 5—CONTROLS

No.	Name	Sex	Age	Health	Occupation	Exposure	Basophilic Aggregation
1	F. B.	F	25	Good	Office work	None	+
2	M. C.	F	21	Good	Telephone Operator	None	+
3	R. H.	F	33	Good	Housewife	None	0
4	O. H.	M	25	Good	Welder	Yes	+++
5	R.	M	40	Gangrene lung recovery	Painter—one year ago	Yes	+++
6	C. R.	M	32	Good	Machinist (Storage Battery)	Yes	++++
7	M. M.	F	18	Lues.	Stenographer	Neoparsphenamin	+++++
8	A. W.	F	24	Follicular tonsillitis	Teacher	None	+
9	J. E. S.	M	35	Boils—G. C.	None	None	+
10	W. P.	M	44	Good	Physician	None	0
11	A. H.	F	24	Good	Office work	None	+++
12	O. F. B.	F	18	Good	None	None	+++
13	Sr. A.	F	50	Good	Lab. work	Possible	0
14	J. F.	F	20	Good	Nurse	None	++
15	G. L.	F	21	Good	Lab. work	Possible	+++
16	E. T.	F	20	Good	Nurse	None	0

in the blood and correlating the findings with symptoms of lead poisoning. Of the thirty-six examined, in only three did the basophilic aggregation count fall within the limits of normal as determined by McCord, Minster and Rehm. Twelve cases presented anemia, seven cases had a lead line, eight presented mild gastro-intestinal symptoms. Thirteen cases presented basophilic aggregations of ten plus or more and in this group were found nine of the twelve cases of anemia, five of the seven lead lines. While averages are often considered fallacious, it is nevertheless interesting to note that the average length of employment was far greater in the group of ten plus than in the other groups; and that the average blood pressure was greatest in this group, a finding consistent with the belief that employment in a lead industry causes a gradual rise of blood pressure.

Leathers and Morgan<sup>24</sup> conducted an examination in a plant, peculiarly like the one here studied. In that instance the plant was also devoted to the enameling of stove parts and the employees numbered thirty-nine. The results of the two studies were similar. They examined the blood for stippling but not for basophilic aggregations. They reported fifteen cases of "positive lead poisoning." Our group revealed thirteen with basophilic aggregations of plus ten or more—many of whom had other symptoms of lead poisoning. It appears to us, however, that several of the cases reported as "positive" by Leathers and Morgan are open to question, and we certainly would not record our group of thirteen as all positive lead poisoning. Both studies revealed a large number of other physical defects. Working conditions in the plant here studied

were much better than those in which the Leathers and Morgan examination was made.

#### CONCLUSIONS

1. The basophilic aggregation test is a simple procedure that may be profitably employed in lead industries as a warning of increasing lead intoxication.
2. Lead poisoning is a hazard in industries where lead is used, even where working conditions are excellent.
3. Physical examinations should be made of employees at time of employment and at intervals thereafter.

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### DISCUSSION

Dr. R. A. Harris, Quincy: This test really is extremely simple and the aggregations are much easier to find than the basophilic stippling. The stain consists of 5 grams of borax, 2 grams of methylene-blue, and 100 c. c. of boiling water. McCord says that for some reason certain batches of stain that he has made up do not work, and he believes it has something to do with the hydrogen ion concentration. However, the batches that we made up luckily were good. The smear may be made just as for an ordinary Wright's stain, except that it is preferable to get a fairly thick smear rather than a thin one.

McCord believes that he gets about three times as thick a smear as an ordinary Wright's stain smear. The red cells are usually layered and it is possible because of laking to see through several layers.

One may either lake the blood with saline or with distilled water before staining, or, much more simply, make up a fresh dilution of Manson's methylene blue with distilled water until it is transparent and then stain without fixing for ten minutes. With a very dilute stain such as this we get a laking before staining.

The appearance of the aggregations will vary with the rapidity of the laking so that sometimes we are able to find them in a sort of ring formation. At other times they seem to be extruded from the cells. Sometimes the cells will show up as rather pale bodies. At other times they will be absolutely invisible.

At first we found that many of our stains were washed off and it is advisable to make them fairly thick and to wash them very gently. The slides are examined after drying with the oil immersion lens.

Since we have gotten this list of controls I have taken a few others. One the other day was in an anemia following a terrific infection. This case had a hemoglobin of sixteen per cent. and a blood count of 1,580,000. Needless to say, she had a ten plus, and really higher than a ten plus, although this is as high as McCord goes.

I felt that the test was fairly valuable indication of basophilic material. You will find aggregations in many cases in large numbers where you do not find the stippled cells and with a great deal more ease. Dr. Pearce and I did our work as independently as possible. That is, I knew nothing of the time of employment or the specific nature of employment of any of the cases on which I took aggregations, and we only correlated our findings after the work had been done.

Dr. M. Earl Brennan, East St. Louis: I was very much interested in Dr. Pearce' paper. I have had experience with manufacturers of lead products for several years. His problem is only a drop in the bucket to what ours is in manufacturing the lead products that they use.

The plant at Quincy has many physically unfit employees judging from all the physical defects and abnormalities reported.

The blood smear for cell aggregations is worth every bit that he says it is. It should be done routinely, but I would like to emphasize that each plant has its own problem.

The difficulty with this type of statistics is that it does not take in all types of absorption. The findings both clinically and by laboratory depend upon two factors: the amount of lead absorbed and in what length of time that amount was absorbed. One man with a cell aggregation of ten may be reaching a dangerous point, where another employee with a cell aggregation of a greater number may not be so dangerous. It depends upon his particular occupation and the particular hazard connected with it and the time interval in the rate of increase in cell aggregations.

The number of cell aggregations mentioned as indicating reaching the danger line, I think, is too small. One large plant uses this routinely.

They alternate or change the men when the cell aggregation averages 30 or 40 per field, or when there are so many that you cannot count them, these men are kept away from any further lead absorption and given other employment in the plant, and may return when their cell aggregation gets below six. The rate of increase in cell aggregation is more important than the actual number per field except in extremes.

I would like to ask if he checked the number of cell aggregations against stipple cells, and the proportion found.

I do not see clearly any differentiation between lead poisoning and lead absorption. We do not use the term poisoning. All our cases are classified as lead absorption or lead intoxication with four types under intoxication. Lead poisoning may mean anything from zero to the most severe cases. The cases that we call lead



(poisoning) intoxication are clinical cases with subjective symptoms that are ill and unable to work, disability cases. The others are classed as lead absorption. You have no lead hazard or no lead industry where the employees working will not in time show symptoms or signs of absorption.

The lead line is seen less frequently in women than in men because they take better care of their teeth and gums. The lead line will only be found in diseased gums. Some of our acute cases never show a lead line, and some of our most chronic absorbers over long periods of time show constant lead line, depending upon the care of the gums. The lead line is positive evidence of lead absorption but never indicates poisoning or intoxication. In known absorbers it should never be considered as a point in diagnosis.

The finding of lead in the urine or feces is of very little value except in non-industrial cases. There is no one working in any lead industry, absorbing lead, but what you may find lead in the feces or urine. It is of no value in making a differential diagnosis.

The blood pressure findings in the series presented I think are not really due to lead. In early acute intoxications you get no rising blood pressure. In fact, in most acute intoxications you get a fall. With men who have been in the lead industry for long periods of time with slow chronic absorption there are gradual changes, and they usually have a gradual rise in blood pressure.

I do not think females should be employed as sprayers in enameling plants. We have three enameling plants of the same character as mentioned, in our district.

Dr. Warren Pearce, Quincy: I am sorry that time did not permit the reading of the entire paper, because many of the points mentioned by Dr. Brennan are brought out in the portion of the paper that was not read.

As previously mentioned, I am not primarily interested in occupational diseases. I became interested in lead poisoning because several cases had been encountered in my practice, all of the cases coming from the plant here studied.

The doctor should read, if he has not already done so, the article by Leathers and Morgan to which I have referred in the paper. In the plant investigated by these authors, not a single employee was found free from physical defects. The number of physical defects found in our cases was mentioned as an argument for the physical examination of all workers before their employment. It is difficult to see how employers can afford to take the risk of employing workers without physical examination. However, they do assume this risk in many instances.

In this study, examination of the blood for stippling was not made as our interest was primarily in the basophilic aggregation test. Dr. Aub of Harvard, with whom I have corresponded on this subject, considers the basophilic aggregation test is an indication of active blood degeneration and is positive in lead poisoning as

well as in other conditions causing such degeneration, and that it is a satisfactory test as a warning of developing anemia, whether it be from lead or other causes.

The lead line, as has been said, is found in cases of lead poisoning where the mouth and teeth have been neglected. When occurring it is of diagnostic value.

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## TREATMENT OF HYPEREMESIS GRAVIDARUM

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CHICAGO

Nausea and vomiting in pregnancy are neglected by both the physician and the patient. The patient labors under the delusion that hyperemesis is essential in the early stage of pregnancy. The physician seldom has a clear cut idea of its management. Consequently, it is the patient who suffers. It is for this reason I wish to present a working basis for the management of these cases. This plan, if followed in its smallest details, will be successful in 90% of the cases.

To obtain the best results, one should see the patient early. First, make a complete physical examination and rule out other causes of vomiting, especially infections about the head. Nasal accumulations discharging backward, are not an infrequent source of vomiting. Abdominal disturbances, such as gall-bladder disease, chronic appendicitis and ulcers of the stomach and duodenum, have been factors in producing the nausea and vomiting in several patients. One should not overlook local disturbances such as retroversion of the uterus, cervicitis and vaginitis. If any of these are present, they should be treated as indicated. I have found it necessary, in the past ten years, to remove three appendices. Two patients have had their nasal infection treated by rhinologists; two have had abscessed teeth removed, and one patient had pyorrhea so badly that it was a factor in producing the nausea and vomiting.

If none of the above causes are present and we think the nausea and vomiting are due entirely to the pregnancy, it is my custom to give the patient the following printed instructions:

"Have a small quantity of soda crackers, social tea wafers or any biscuit beside the bed, also a thermos bottle containing hot coffee, hot or cold milk or hot tea, whichever is preferred. Prepare

these in the evening before retiring. Whenever you wake during the night eat two or three biscuits and drink a small cup of fluid. When you wake in the morning do the same and then rest quietly for at least an hour. Shortly after arising, eat your regular breakfast. Thereafter eat at least every two hours, oftener if the nausea returns. The taking of food, promptly, should relieve the nausea. Do not, under any circumstances, drink liquids of any kind without taking solid food. With the exception of highly seasoned, fat fried or indigestible foods, no restriction is placed on the variety of foods which may be taken. Popcorn will frequently alleviate the nausea. If these instructions do not prove successful in eliminating your unpleasantness in a few days, report at the office."

In addition to this I prescribe corpus luteum tablets, gr. 2, four times a day. If the patient is not sleeping well, luminal  $\frac{1}{2}$  gr. is given at 9:00 p. m. She is allowed to stay home for about a week. If the nausea and vomiting become worse, she is hospitalized early. Do not wait, because it is more difficult to control a late case. It is almost useless to treat this type of patient in the home. I have long since given up trying. There are too many interruptions in the routine, too many household details to watch, too many telephone calls, too many doorbells ringing and too many thoughtless friends who harp on the patient's illness. In the busy home today this is more than this pregnant patient can overcome.

With the patient in the hospital, it is here that some definite plan should be utilized to obtain the best results. Many plans have been suggested, but I find that most of them lack detailed instruction. Therefore, unless one is trained in obstetrics, the methods are frequently misapplied. I know this to be true from my consultation work in this field.

I wish now to present a definite routine which can be utilized in the management of the majority of cases. During the first 24 hours in the hospital the patient is given no food by mouth. The room is darkened and a special nurse is employed. Care should be taken in the choice of nurse, one who has had experience in the handling of hyperemesis gravidarum, being necessary. It is essential that she be quiet in her manner and be confident in obtaining results.

The telephone should be disconnected and visitors prohibited. The only relative given permission to visit the patient is the husband, unless it is found that his presence excites the patient and produces nausea and vomiting. This fact is frequently overlooked by the nurse and physician.

The average patient with nausea and vomiting is suffering more or less from acidosis and the object of our treatment, therefore, should be to overcome this. After the patient has been in the hospital for a few hours, a cleansing enema is given and proctoclysis started. We endeavor to have her retain 4000 c.c. of the following solution every 24 hours:

Glucose .....	5%
Soda bicarb .....	2%
Sod. Brom .....	gr. 160
Water .....	4000 c.c.

The fluid is given by the Murphy Drip Method and is usually retained without a great deal of difficulty during the first 48 hours. One ampule of Corpus Luteum is given (hypodermically) three times a day. An alkaline mouth wash is prescribed, the one most frequently used being Liq. Antisepticus Alkalinus. The teeth and tongue are cleaned three or four times a day with this solution. This is essential, as a bad taste in the mouth is not an infrequent cause of nausea.

If the patient has been sick for some time before entering the hospital, I frequently use gastric lavage on the first day. Six or eight quarts of tap water are employed. About 500 c.c. of  $\frac{1}{2}\%$  soda bicarbonate solution is left in the stomach. I find that this produces gastric rest and gives the patient a sense of well-being.

The nurse is instructed to save each specimen of urine, recording the time passed and the amount. Each one is tested for acetone and diacetic acid. It is important to know whether or not there is much of these products present in the urine since the management of the case depends a great deal upon the presence or absence of these signs of acidosis. The gradual or rapid decline in the amount of diacetic acid or acetone means the patient is recovering.

The second 24 hours the patient is given toast, jelly, iced hard boiled egg and jello. It is essential to have the food attractively served. The patient is encouraged to eat every 2 hours at least, more frequently if the nausea is present.



The corpus luteum is continued. If the patient seems to be dehydrated, 2000 c.c. of salt solution is given by hypodermoclysis. If the acetone and diacetic acid are present in large quantities, 5% glucose is used instead of normal salt solution.

The third day, if the patient is doing nicely, she is given a dram of liquid by mouth every ten minutes which amounts to nearly a pint in 16 hours. The patient is requested to note the time and feed herself the liquid. We do this for two reasons: to keep her busy and to occupy her mind. The food allowance is increased to include a baked potato, a lamb chop broiled so that the edges are slightly burned and a warm cereal, using butter and sugar instead of cream. Hard candies are served as the patient desires. The corpus luteum is decreased to 2 ampules a day. The proctoclysis is reduced to 2000 c.c. per day.

On the fourth day we increase the water intake by mouth to 3 drams every fifteen minutes and give a glass of liquid with the meals. The same diet is continued as on the third day.

On the fifth day the patient is allowed to select food from the regular diet. Liquids are given more freely and the proctoclysis is stopped. Usually by the sixth day, she is up in a chair and home on the eighth or tenth day. It is essential that the patient be protected from visitors and petty annoyances until she is well enough to sit up.

If the patient does not show results with this management by the third day and if the diacetic acid and acetone still remain high, I have on several occasions used glucose and insulin. In a few cases it has worked marvelously while in others it has had apparently little effect, in which instances I am inclined to believe that we have waited too long before employing them. On the other hand, they should not be used too early.

Other methods of procedure are recommended, the best perhaps being the use of the duodenal tube in stubborn cases. The tube is passed and liquid preparations, such as peptonized milk, etc., are used. I have had no occasion to employ this method in any cases under my personal direction.

The patient should not be allowed to go on indefinitely with nausea and vomiting before a therapeutic abortion is done. One should not endeavor to see how much the patient can suffer before we interfere. The least sign of a neurotic

lesion, of a persistent tachycardia or a rapid loss of weight in spite of treatment, is an indication for the interruption of pregnancy. The method of procedure should be individualized. Personally, I prefer curettage, gauze induction or vaginal cesarean section, depending upon the vitality of the patient and the period of pregnancy.

I have purposely left out references to many other procedures, preferring to leave this routine fresh in your minds. It has given good results in 90% of the cases under my personal direction and has proved practical in the hands of students and internes.

## THE HEALTH WORK OF THE LEAGUE OF NATIONS\*

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CHICAGO

It was my privilege during the past summer to be a member of a select group of 100 professional men, under the leadership of Sherwood Eddy, to make a study of economic, political, social and religious conditions in Europe, listening to and interrogating leading men in London, Berlin, Prague, Vienna and Paris. At the headquarters of the League of Nations in Geneva, Switzerland, we were joined by another group of 150 from English speaking nations and there made a study of that great international organization.

I was the only physician in our American group and naturally made a special study of the health and humanitarian activities of the League that have developed on a world-wide scale. Like many other Americans I had not *known* much about the League's work for the health of the world, and probably nine-tenths of my hearers today have never even heard of the Health Organization of the League of Nations. After my study I am prepared to affirm that, if the League of Nations had failed in all else, its health organization alone, in its successful achievements and program of humanitarian service, would justify the League's existence before the bar of enlightened opinion.

Article 23 of the Covenant obliges the members of the League "to take steps in matters of international concern for the prevention and control of disease." Epidemic disease is an international matter. The history of the great plagues

\*Radio Talk Over WGN

of the world will show the gradual growth of a feeling of international relationship. Men and nations do not live or die by themselves. Some of you remember the great epidemic of la grippe in 1890 that developed in Eastern China and Russia and in a few weeks swept around the world.

The world-epidemic of influenza in 1918 is still fresh in the minds of all. Dr. Norman White told us that in India alone during that one winter six million people died of influenza alone. More people *died* during this one world epidemic than were *killed* during the entire World War.

The Health Organization of the League was the direct result of the Health Conference in 1920 to meet the oncoming epidemic of typhus fever that was sweeping from Russia following the War. Typhus and relapsing fever had increased thirty fold in Russia and were spreading into Europe by way of Poland. If the League had not grappled at once and effectively with this menace that was sweeping into those small and inexperienced border states a world epidemic might have gotten started that would not have left America unscathed.

It is worthy of note that one of the first martyrs in the fight against typhus was our own Dr. Ricketts, of the University of Chicago, who lost his life in the mountains of Mexico while discovering and proving that typhus is contracted from the bite of an infected louse or tick. He found the cause, but not the cure for typhus. So in this critical time in Poland the health commission mobilized a great medical force, clothes, soap, drugs, vaccines and delousing machines, with motor transport, food and fuel. Fifty hospital stations with fifty beds each were established in a north and south line for cure and quarantine. It was a great fight, and the plague did not sweep Western Europe, but one hundred eighty-five of the medical staff lost their lives, for there was no known vaccine to give protection. A monument in Poland tells of their heroic martyrdom.

Although in this country we still have much to learn in the way of cleanliness, we are lucky to be free from those peculiarly horrible diseases which are spread by vermin. Under crowded conditions the control of vermin infestation is still a serious problem. At times these vermin

take on tremendous powers of multiplication like the plagues of Egypt in the days of Moses. There are great scientists who fear that man's greatest fight for survival will be with the insect world.

The prevalence of lice among soldiers in the world war was never equalled before. No army was spared from wide-spread infestation by vermin and the diseases transmitted by these pests. Over 90 per cent of the troops were vermin-infested. Sometimes they were a real plague.

The story is told of a doughboy who had cooties as uninvited guests and who went to a drug store and asked for a pound of blue ointment. The druggist looked at him in a surprised way and said: "Why, a pound of blue ointment would kill a million cooties." "Give me *two* pounds," said the doughboy.

After Dr. White's work in stopping land-borne epidemic diseases sweeping from Russia through Europe, he made a tour through the ports of the far-east which have been the center of the great sea-borne epidemic diseases. Again, most of these plagues are transmitted by the insect world. On his suggestion, a central station was set up in Singapore and reports from 150 towns are received there each week, reporting all epidemic developments. This epidemic news is sent by wireless all over the world. It is picked up by ships at sea which are thus warned before entering any harbor where there is danger of infection. In the old days Europe and America fought cholera when it reached their shores. One of Turner's famous paintings portrays the burning of a plague infected ship in the river Thames. *Now* it is possible to be forewarned and attack the enemy before it arrives.

One great work of the League has been to secure joint action of the nations in combating the epidemic diseases of the world. It is really the first experiment in international sanitary cooperation on a large scale.

As an example, in 1922 following the Greco-Turkish war in Asia Minor, a great stream of destitute refugees began pouring into Greece that soon reached one-fifth of the population. Terrible unsanitary conditions soon developed. The Greek government appealed to the League of Nations and Dr. Nansen, of Polar fame, was sent and a preventive medical campaign was organized. Ten vaccination columns advanced in



the highest of all war, the war against disease, and vaccinated over half a million refugees against smallpox, cholera, enteric fever and other contagious diseases. The Greek government was helped in solving the tremendous sanitary problems that arose from this emergency.

The League of Nations literally has its fingers on the pulse of the world. Its medical experts, of international renown, find out how best to fight these great epidemic diseases and this information is published for the benefit of all. It has brought experts together to discuss their work. It has arranged for doctors from various nations to work side by side in one laboratory so that they could agree upon the best method of testing for certain diseases. It has arranged for tours of public health officers collected from nine or ten countries at a time who visit a number of foreign countries and study their sanitary methods. The Health Section is a great "pool of information" which both receives and gives that knowledge which makes the world healthier and happier.

SUPPURATIVE WOUNDS  
THE USE OF GLYCERIN AS A TOPICAL APPLICATION

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The satisfactory treatment of suppurative wounds has been a problem for a considerable time. Numerous applications have been suggested and used with the hope of diminishing the volume of wound secretion, exudate and debris while preserving the integrity of the constructive forces in the repair of the infected wound. Several of these may be mentioned. Alcohol in varying dilutions, but preferably 70%, has been found to be an excellent application for suppurative wounds. However, the intense pain occasioned by its application to a raw surface, especially when this surface is extensive, has rendered it prohibitive where frequent or daily dressings are necessary. Moist applications such as boric acid compresses which retain their moisture are usually of little value when drainage has already been established from an infected wound. It has been pointed out that continuation of such dressings produces only harm since blisters, furunculosis and even lymphangitis has been found to develop in the macerated skin pro-

duced by the wet compresses.<sup>1</sup> Chemical antiseptics are of definite value but in the profusely exudating wound dilution and surface removal are too rapid to permit of continual benefit following their application. The use of Dakin's solution, neutral sodium hypochlorite irrigations, hypertonic salt solutions, etc., are more suited to deep suppurative wounds and are impractical in the ambulatory case where the wound involves superficial portions of the extremities.

We have found in such wounds that the application of chemically pure glycerin is of definite value in diminishing the volume of exudate, inhibiting the spread of lymphangitis and reducing the swelling or bogginess usually present about such wounds. An experience with several thousand dressings in which this substance was employed demonstrated that dressings impregnated with a copious amount of glycerin were not painful when applied and could be removed painlessly and without disturbing delicate granulations developing under the dressings.

Glycerin owes its beneficial action to its antiseptic and hygroscopic properties. Ruediger<sup>2</sup> in studying the germicidal properties of glycerin found that this substance has a germicidal activity which varies directly with the temperature, being more potent at a temperature between 30° and 35° C than at lower temperatures.

Winslow and Holland<sup>3</sup> found that the antiseptic properties began in a concentration of 28%. A 100% solution of glycerin killed 90% of B. Coli in 3 hours. Compton showed further that glycerin had a different rate of antiseptic and germicidal activity on different organisms confirming previous work by Ruediger. The following table was compiled from a study of the growth of subcultures after contact with pure glycerin:

Organism	Antiseptic Response Hours	Bactericidal Response Hours
Enterococcus .....	48	60
B. Coli Comm. ....	15	18
B. Coli .....	12	15
Staphylococcus .....	12	15
Strep. Haemolyticus .....	6	8
Gonococcus .....	1/2	1

While glycerin dressings may owe their therapeutic potency in a measure to their mild antiseptic and germicidal properties, perhaps of greater importance is the abstraction of fluid from the wound and the probable reversal of

lymph flow to the wound surface peripherally instead of into the lymph channels directed centrally. In more than one instance we have seen spreading lymphangitis about a wound cease with no other therapeutic measure directed locally than the application of glycerin dressings.

Compton<sup>4</sup> has taken advantage of this property in the intra-uterine injection of pure glycerin with the hope of abstracting fluids containing toxins and organisms from the infected tissues following a post-abortive pelvic peritonitis.

The use of glycerin dressings is not at all a new procedure, having been employed for a considerable time in various combinations more commonly in a dilution with an equal part of 70% alcohol. While the latter application has distinct advantages as a local application extensive suppurative wounds become too painful to permit of frequent applications of this solution.

No bacteriological studies have been undertaken at the present time but the clinical use of glycerin in our experience warrants the following conclusions:

1. Glycerin, chemically pure, when applied to a suppurative wound at or slightly above body temperature aids in diminishing the amount of wound exudate.

2. Spreading lymphangitis and tissue swelling may be inhibited or diminished by frequent applications of this substance.

3. Removal and reapplication of dressings impregnated with glycerin are not painful and do not occasion as much discomfort as dressings commonly do in suppurative wounds.

4. Following the establishment of drainage from an infected wound subsequent to the use of hot wet dressings, glycerin applications are of distinct value in avoiding maceration and the development of superficial infections that commonly follow continuance of hot moist applications.

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## RECENT ADVANCES IN THE STUDY OF BRONCHIAL ASTHMA\*

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In May, 1924, we established a new clinic at Northwestern University Medical School. This was for the care of patients suffering from the various diseases which we now classify as allergic in type. Up to date about 1,000 patients have been studied at this clinic. Included in the varieties taken care of are the following clinical conditions:

Bronchial asthma, which is the subject for tonight, comprises about two-thirds of all the cases and we diagnose it chiefly on the history of attacks of difficult breathing and wheezing with intervals of freedom between the attacks. Of great importance are the onset early in life, the strong tendency to hereditary transmission, and the positive skin tests in most cases.

Asthmatic bronchitis is characterized by dyspnea, cough and wheezing, with cough the main feature and with onset late in life, with absence of allergic and hereditary findings and with more or less constant distress.

The third member of the group is a newcomer and is called allergic bronchitis. Among others, Waldbott,<sup>1</sup> of Detroit, emphasized the great frequency of cases of bronchitis, without asthma, in which there is a sudden onset of a dry, unproductive cough: these cases occur in children, usually, frequently have an allergic family history, respond to ephedrin and epinephrin, and removal of the offending protein brings relief in most instances. It is in this group especially, where prophylactic treatment may be of great avail.

Allergic rhinitis, the fourth member, is a frequent condition and is more often termed vasomotor rhinitis or hypersensitive rhinitis. We believe the term allergic rhinitis is the best one as very frequently the patients are improved by treatment along the lines of allergy, which includes skin tests and removal of offending substances.

Hay-fever, urticaria, angioneurotic edema and eczema in children are common and comprise a considerable percentage of our material. In ad-

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dition, there were a few cases of so-called food allergy, where patients have various gastro-intestinal upsets on eating certain foods. We also tested out a few cases of migraine, epilepsy, and miscellaneous skin diseases.

About fifteen per cent. of all cases studied were referred to the medical dispensary for further treatment. These patients were non-allergic and for the most part were cardiac cases with so-called cardiac asthma, some with hypertension and chronic nephritis; a few cases were luetic and these did well on specific treatment. Occasional mediastinal tumors and a few patients with pulmonary tuberculosis were found.

Let us consider bronchial asthma tonight as this is the most important of all.

All through the centuries asthma has been considered more or less incurable and even today there are many physicians, perhaps the majority, who still believe that there is no hope for the asthmatic. It behooves those of us, then, who have given special attention to the subject to try to bring to light the knowledge gained in recent years, in order that hope should replace despair.

The anatomy of the bronchi interests us especially as regards the muscle layer and the innervation. The muscle layer is almost entirely of the circular type and studies indicate that as the bronchi diminish in size with division the muscle layer becomes proportionately larger. The bronchi are entirely under the control of the vegetative nervous system. Stimulation of the vagus nerve causes contraction of these bronchial muscles. Stimulation of the sympathetic merely opposes the action of the vagus and so relaxes bronchial muscles which are constricted. Epinephrin acts by stimulating the sympathetic fibers and relieves paroxysms of asthma by inhibiting the constricting action of the vagus nerve, not by an opposing set of muscles—only one set of muscles has been described.

Sensory fibers of the vagus are plentiful in the epithelial layer and this explains the marked irritability of the mucosa to materials from without; these nerves therefore aid us in protection; but when asthma occurs their very sensitiveness brings on many attacks.

There are two main theories as to the manner or mechanism of the paroxysm of asthma, the theory of bronchospasm and the theory of edema of the mucosa. The theory that asthma results

from a contraction or spasm of bronchial muscles, is strongly supported by experimental work in which actual muscle contraction occurs on stimulating the vagus nerve; and by the work done by Huber and Koessler<sup>2</sup> in 1922, who demonstrated, post-mortem, that definite hypertrophy of the bronchial muscles occurred in cases of chronic asthma.

The theory of edema of the mucosa as a cause of obstruction of the bronchi also has much in its favor. First of all, every other variety of allergy is characterized by local edema. This includes hay-fever, vasomotor rhinitis, urticaria, and even the skin tests used in diagnosis. By analogy, then, bronchial asthma may be caused by an exudation into the bronchial lumen with obstruction. Post-mortem findings have also, in a few cases, shown swelling of the bronchial mucosa, and, lately, bronchoscopy offering direct vision, has enabled several observers to report marked edema during attacks of asthma. These two theories have their champions and the question is not settled. Probably the truth is that the same stimuli which cause bronchospasm also cause increased secretion and that the resulting bronchial obstruction comes from both sources.

There are other theories, less well supported, as to the mechanism of asthmatic attacks. One is that the asthma is a result of focal infection, from teeth, tonsils, sinuses, etc. There is little experimental evidence in favor of this theory and, clinically, permanent improvement from removal of these foci of infection rarely occurs. It is true that operations, based on this theory are sometimes successful but most of us know only too well that the improvement, if any, is temporary in most cases.

Of chief importance in recent work on the etiology of bronchial asthma are the questions of heredity and allergy. Heredity has been shown to be all powerful. Studies by Cooke, Vander-Veer, Drinkwater<sup>3</sup> and many others have put the hereditary theory on such a firm basis that we must accept it and say that true bronchial asthma in most cases is handed down from one generation to another. It has also been shown that the tendency conforms to Mendelian law as a dominant characteristic. In addition, it has been demonstrated that where both parents suffer from some one or other allergic condition the children are almost sure to develop hay fever or asthma and at an earlier age; where there is

unilateral family inheritance the likelihood of passage to the offspring is less and the age of onset of allergic symptoms is later; and lastly, when neither parent is allergic, there is much less chance of allergy in the children and if such does occur it is usually much later in life than where hereditary influences are strong.

These statements are based on many statistics, among them the following: Cooke<sup>4</sup> found that 69.5 per cent. of children with bilateral hereditary influence showed some form of allergy or atopy as he calls it, and only 41 per cent. where no family history was obtained; furthermore, of these children, 72 per cent. with bilateral family history showed allergic symptoms before the age of ten; 35 per cent. with unilateral family history had symptoms before the age of ten; and only 20 per cent. where there was no family history at all. Balyeat,<sup>5</sup> of Oklahoma City, studied 1,000 cases with reference to heredity and found the following: 58.6 per cent. of cases with bilateral family history developed symptoms of allergy in the first decade and 32.3 per cent. with unilateral history. Only three cases with bilateral family history developed symptoms after the age of thirty. Incidentally, Balyeat skin-tested a number of new-born infants and found positive skin tests to wheat and egg in two cases. This, if substantiated, will be a strong argument in favor of the importance of heredity in bronchial asthma. Balyeat used as controls 1,117 normal university students—only 8 per cent. of these healthy persons gave a positive family history of asthma or hay-fever, as opposed to about 60 per cent. in patients with asthma and hay-fever.

A. E. Smith<sup>6</sup> has reported a family of 94 persons in five generations with special regard to hereditary occurrence of allergic manifestations. Of these 94, 56.2 per cent. suffered from one or other of the allergic diseases; 4 had asthma, 11 hay-fever, 15 vasomotor or allergic rhinitis, 17 urticaria, 6 angioneurotic edema, and 14 eczema. Twenty-three persons who married into this family were used as controls in this study; of these 23 only one was allergic.

It has been repeatedly shown that the children of allergic parents usually develop allergy but that the form in the offspring need not be the same,—thus the child may have hay-fever and the parent asthma, or vice versa.

Allergy is the other main line of advance in

the study of bronchial asthma and its recognition has stimulated much research work. The word allergy, or altered reactivity, is very often confused with anaphylaxis. These can be readily distinguished if we recall that anaphylaxis occurs practically only in animals as a result of experimentation. A guinea-pig, for example, is given an injection of egg white and after seven to ten days the injection is repeated. No symptoms will result from the first injection, but after the second, if dosage and timing are suitable, the guinea-pig will have more or less marked bronchospasm, ending in recovery or death depending on the dosage. Under similar circumstances a dog has circulatory changes and rabbits have lesions in the pulmonary blood-vessels.

In contrast, allergy occurs only in man and with symptoms involving chiefly the respiratory and gastro-intestinal tracts and skin, thus giving rise to the clinical conditions we call bronchial asthma or hay-fever or allergic rhinitis or urticaria, etc. Now what causes allergy in man? We believe that it is a condition of hypersensitiveness or idiosyncrasy to some one or more substances which usually contain protein material, though not necessarily so; for example, most cases of allergy follow exposure to pollens, or animal dander, furs or feathers, or protein foods or orris root, the main ingredient of certain face powders. But there are frequent attacks following taking of aspirin and other drugs which contain no protein.

Then we have to explain why only a small percentage of people are victims of allergy. For example, why is it that most of us eat strawberries and no harm results? And why does about one person in a hundred break out with more or less severe urticaria or hives after eating these berries? And why does only about one per cent. of the population have hay-fever although we are all more or less equally exposed? The answer we now believe lies in the factor of heredity and we believe that heredity is the main predisposing factor to the entire group of allergic diseases. Although this explanation does not get to the bottom of the matter it has been accepted by the large majority of men who are giving special attention to allergic diseases.

Kolmer<sup>7</sup> in 1928, in reviewing the classification of allergy earnestly recommended simplifying the confusion in terms and he asked that the word "alergy" be used instead of "anaphylaxis,"



"idiosyncrasy" and "atopy"; and that the exciting agent be called an "allergen," instead of an "anaphylactogen," "sensibilogen," "sensitigen" or "atopen." We believe his suggestion an excellent one and adopt it with a view to doing away with the various terms used by different men.

The pathology of bronchial asthma offers little new evidence. Death during an asthmatic attack is rare, as we all know. However, Kountz and Alexander<sup>8</sup> recently reported three cases of death from bronchial asthma. Clinical and postmortem findings were given and it was shown that there was marked thickening of the muscle and subepithelial layers in the 3-6 mm. bronchi, thus confirming the work of Huber and Koessler; it was also found that the smaller bronchi were dilated and for the first time they showed that actual rupture of the basement membrane occurred with infiltration and destruction of muscle fibers by eosinophils as well as destruction of bronchial cartilage. They also reported that in two cases, one of twenty-five years duration and one of three years, that there was no demonstrable heart disease, despite the fact that one patient had persistent edema of both legs. This finding is in line with the fact that patients with bronchial asthma usually have good hearts.

We need not go into the symptoms of bronchial asthma except to emphasize once again the attacks of dyspnea and wheezing with freedom between attacks, and the early age at which symptoms begin, especially in those children who are unfortunate enough to have two allergic parents. This freedom between attacks occurs in the earliest years of bronchial asthma. As time goes on, however, the two main complications gradually set in, namely, emphysema and chronic bronchitis. These bring with them more or less constant difficult breathing and cough and we find that the child who could do anything between attacks now shows dyspnea on slight exertion. And we also find that our clinical results become less satisfactory when these complications occur and it becomes evident that the best time for treatment is before emphysema and chronic bronchitis are superimposed on the picture.

The diagnosis of bronchial asthma is usually easily made on the history as already given. Confirmatory findings are positive skin tests in most cases, eosinophilia in the blood, and eosi-

nophils, Curschman spirals and Charcot-Leyden crystals in the sputum. X-rays usually show more or less evidence of generalized fibrosis beginning at the hila of the lungs and spreading out in a fan-like fashion. An important point is that epinephrin given subcutaneously will almost always relieve an attack of true bronchial asthma, especially if uncomplicated.

In our clinic and in private practice we put our asthmatics through a definite routine. Each patient has a complete history taken on a special form and a complete physical examination is made. Wassermann, urine and blood counts are also carried out, as well as sputum and chest x-ray examinations. Most of the patients are also seen by nose and throat specialists and where indicated sinus x-rays are obtained. A few have had bronchoscopies in addition.

A few words about skin tests. There are two main ways of performing these, the cutaneous or scratch method and the intracutaneous or intradermal method. We have adopted the cutaneous method and only use the injections into the skin as confirmatory or when cutaneous tests have failed us.

About 85 per cent. of all our cases of bronchial asthma give positive skin tests to one or more substances. In order of importance, we place animal derivatives first, such as horse dander, cat hair, and the various feathers; then come pollens, house dust, various foods and miscellaneous substances such as orris root. We test each case thoroughly and use about 150 to 200 tests in most patients, making about twenty-five to thirty scratches on the forearms at each sitting. We have been using the back only in infants or in certain cases where eczema or other skin disorder prevents us from making the tests on the forearms. We do not stop when we find a positive reaction as experience has shown that a patient may be and quite frequently is sensitive to more than one substance, and, correspondingly, will be most benefited by elimination of all offending materials so far as is possible. We believe group testing very unsafe and never use this method.

We go still further. We repeat all positives over and over again to be certain. And we are guided by Cook's postulates, namely, that firstly, the patient must come in contact with the substance which gives a positive skin test and,

secondly, that exposure to that substance should bring on an attack.

In the differential diagnosis we have very little trouble. Asthmatic bronchitis as stated before, comes on later in life, has no allergic nor hereditary findings, skin tests are negative, and cough is a constant symptom.

Cardiac asthma is quite common and is easily diagnosed on the history of dyspnea on exertion beginning in the later stages of life and associated with definite signs of cardiac diseases, such as enlarged heart, hypertension, accentuated second aortic tones, moist rales at the bases of the lungs and sometimes by enlarged liver and some edema of the lower extremities. In addition, arrhythmias may be present and we are aided by x-ray and electrocardiographic findings. Skin tests are negative.

Pulmonary tuberculosis must be thought of and we know how frequently the two diseases are confused, even to the extent of putting an asthmatic in a sanatorium for tuberculosis. It is true that the two may co-exist, but repeated negative sputums in doubtful cases should make us suspect asthma, especially where there is a history of allergy in the family. When in doubt, it seems to me that we cannot afford to omit skin tests.

Other chest diseases occur, such as lung syphilis and mediastinal tumors. Inspiratory dyspnea should make us suspect pressure on a bronchus or larynx or a foreign body in the upper air passages. The dyspnea in bronchial asthma is chiefly expiratory in type. To illustrate, about a month ago a colored patient was admitted to my service at Cook County Hospital with a diagnosis of bronchial asthma. Examination showed loss of weight and marked dyspnea of inspiratory type; there was also an absence of breath sounds in most of the left lung. The diagnosis was changed to obstruction of the left bronchus and fluoro-scopic and x-ray showed some sort of a mediastinal mass, possibly a gumma. The patient has improved on luetic treatment.

The prognosis of bronchial asthma is undoubtedly more favorable now than formerly. It used to be considered a more or less incurable disease. Now we do not believe it is incurable. On the contrary, we think that we can improve or entirely alleviate the symptoms of the majority of cases of true bronchial asthma.

In our series of cases, both at the clinic and in private practice, about 85 per cent. of the patients with true bronchial asthma have shown improvement. About one-third of these have been completely relieved for a period of from six months to seven years. The remainder of the 85 per cent. are better but still have some symptoms. Pollen asthma cases especially have given most excellent results and asthma has very rarely occurred after pre-seasonal treatment.

Rackemann,<sup>9</sup> of Boston, has followed his cases much longer than we have and in March, 1928, reported 213 cases of asthma of all types completely relieved for more than two years. This was from a total of 1,074 cases, in other words, a so-called "cure," using the word "cure" to mean freedom from symptoms for two years or more, in 20 per cent. of his cases. Of these he found that the younger the patient the better the prognosis and he showed that 65 per cent. of his cases under twelve were either completely relieved or greatly improved. Every worker in this field has also learned that the younger the patient the better the results of treatment.

Other men report likewise. Gottlieb, Piness, Eyermann, Walker, VanderVeer and Duke all answered a questionnaire sent out by M. H. Kahn,<sup>10</sup> of New York, in regard to the curability of bronchial asthma. All reported many cases entirely relieved, although none use the word "cure." Kahn himself is less optimistic and he does not believe that asthma is curable.

The treatment of bronchial asthma is both prophylactic and active. With the almost unanimous agreement as to the tremendous importance of heredity in the cause of bronchial asthma and the other members of the allergic group, it behooves us to see what steps can be taken to prevent these sicknesses.

We know that where both parents are allergic symptoms of one or other variety of allergy will develop in about 60 per cent. of the children. If this fact, and it is a fact, were better known and broadcast to the laity and physicians alike, a forward step would result. First of all, then, inter-marriage between allergics should be frowned upon. This may seem radical, and I have not heard the idea expressed before, but if carried out there would be far less asthma and other allergic diseases.

Secondly, children with one or both parents allergic should be closely watched almost from



birth. Coughs, especially, should be noted as being possibly due to sensitiveness to some foreign substance. Feather pillows should not be allowed these children because of possible trouble from the particles of feathers. Either no pillows or kapok pillows can be used. One food new to the child should be added at a time and at least a week's interval pass before another food is given. This is because of the great frequency of sensitiveness to milk, eggs and wheat in infancy and early childhood.

Thirdly, exposure to animals should be restricted. Household pets, especially dogs and cats, should be forbidden and horseback riding discouraged.

Fourthly, at the very onset of any symptoms which may be allergic, whether it is eczema, or urticaria, or hay-fever or asthma, the child should be thoroughly examined and thoroughly skin-tested. Do this at once and the prognosis becomes excellent. Delay until the chest has become deformed and emphysema and chronic bronchitis have complicated an otherwise simple bronchial asthma and the child may be doomed to more or less continuous suffering. In few other diseases have we such a splendid opportunity to prevent and alleviate symptoms as we have if we promptly recognize an allergic family and adequately care for the children of this family. This prophylactic treatment represents a real advance in the study of bronchial asthma.

The treatment of bronchial asthma after it has occurred is divided into the specific and non-specific. There is little new work on the specific side. We make skin tests and we try to discover the cause. In most cases of true bronchial asthma we find positive tests and in most cases we get good results by removing the cause, where possible. In addition, we attempt to desensitize our patients to substances which we cannot adequately remove. These include pollens: egg, wheat and milk, the most common foods; feathers, horse dander, cat and dog hair, these last two because they are used very commonly for furs; and orris root, unavoidable because of its widespread use in face powders. We also attempt to desensitize those patients who are sensitive to house dust and usually treat them with an extract from dust gathered from their own homes. Desensitization has been attempted by subcuta-

neous injections of the offending substances, beginning with small doses and gradually increasing the strength of the materials. An important point in the treatment, often neglected and often a cause of failure, is the necessity of absolute avoidance, so far as is possible, of the substance for which treatment is being given. For example, it is not sufficient to tell a patient sensitive to egg to avoid eggs,—he must also avoid all egg-containing foods, such as ice-cream, egg-noodles, cakes and pastries, mayonnaise, and certain candies which contain particles of egg.

The non-specific treatment consists of the use of a number of different drugs and other methods of treatment.

Ephedrin has come to stay and is being employed very widely at the present time. We have been using it now for about three years and our results coincide on the whole with those of others. We have used both the sulphate and the hydrochlorid salts and have not seen any advantage of one over the other. We have used it by mouth only, giving from one-sixth to three-fourths of a grain per dose depending on the patient and the severity of the case. We have found that in about 50 per cent. of cases ephedrin helps to prevent attacks and to lessen those which do occur. We have learned, as others have, that all patients cannot take ephedrin, as it causes many to have untoward symptoms, such as tremor, palpitation, insomnia, weakness, excessive perspiration, nausea and vomiting.

Epinephrin or adrenalin still stands supreme for the treatment of attacks of bronchial asthma. Five to fifteen minims of 1:1000 solution hypodermically will relieve most attacks, at least temporarily.

We see no indication for the use of ephedrin hypodermically as its action while prolonged is too slow for use in severe attacks. But we do use it between attacks because of its prolonged action and because it can be taken by mouth. It is an important drug and a welcome addition to our list of medications, but it must be used with caution and its widespread use by the laity discouraged as it is a dangerous drug. For example, Bloedorn and Dickens<sup>11</sup> reported a case of cardiac decompensation due to ephedrin, and Chen, whose work put ephedrin on a firm basis, states that the drug should be used most cautiously, if at all, in cardiovascular diseases.

Other medications are numerous. Potassium iodid and belladonna are good symptomatic agents in loosening secretions and relieving spasms. Atropin we have found ineffective. Calcium therapy, with or without parathyroid or thyroid, has disappointed most of us and we believe its use valueless. Creip and McElroy,<sup>12</sup> recently examined 40 normal students and 167 cases of allergy, including 80 cases of asthma and found that both groups showed normal blood calcium figures (about 10.5 mg. calcium per 100 c.c. blood) and concluded that there was no basis for calcium therapy in allergy. They also tested 10 allergic cases before and after giving five grams of calcium lactate three times daily, with parathyroid extract for twenty days, and found no increase in blood calcium. They also showed that exposures to ultraviolet rays did not increase blood calcium. They also made gastric analyses in 50 cases of allergy and found 36 per cent. achlorhydria, 8 per cent. complete achylia, and 32 per cent. hypo-acidity (below 10 free acid), 28 per cent. normal and 6 per cent. hyperacidity (about 70). This work suggests that hydrochloric acid may be valuable in the treatment of allergic cases.

Peptone given by mouth and intravenously is inefficient, as shown by Ramirez<sup>13</sup> who treated 60 cases with it without any relief. We too have used peptone and abandoned it.

We have used ultraviolet light treatments for the last eighteen months as an accessory to other methods of treatment. We believe that it helps as a tonic. It seems to be especially valuable in children and undernourished adults. Our results have certainly been better since we started giving these exposures. It is necessary to emphasize that it has no specific value, but its use seems to help the appetite and build up the system.

Vaccine treatment is not often necessary in true bronchial asthma, but where secondary infection occurs we make autogenous vaccines from the sputum, plate out the main organisms, grow them separately and skin test the bacteria separately. Then we treat the patient with the one or more varieties which give the best reactions.

Removal of focal infections is carried out as far as possible. Infected sinuses, tonsils and teeth are taken care of and sometimes good

results occur. We do not believe that straightening septums and removing turbinates help.

#### SUMMARY

In conclusion we wish to emphasize the following points:

1. Heredity is very important and the closer the relationship the more probable it is that the children will develop one or other of the allergic diseases; and the closer the relationship the earlier will such symptoms appear.
2. The conception of allergy with its use of skin tests has been a big step forward and treatment based on it has enabled most bronchial asthma cases to be either entirely or partially relieved of symptoms.
3. Skin tests should be thoroughly and completely done or not at all. Testing with ten or twelve materials may be very misleading.
4. The earlier the diagnosis of bronchial asthma is made and the earlier treatment is begun, the better the prognosis. After emphysema and chronic bronchitis have occurred there is less chance for complete recovery.
5. Prophylactic treatment can be very successful and demands propaganda against intermarriage between allergic patients, close observations of children of allergic families, and observations of children of allergic families, and screening such children, so far as is possible, from the more common foreign substances which may precipitate attacks.

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## CARDIAC IRREGULARITIES, THEIR CAUSE, RECOGNITION, AND TREATMENT

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Cardiac irregularities may be discussed under five general headings, premature contractions, auricular fibrillation, paroxysmal tachycardia, conduction disturbances and sinus arrhythmia. The premature contraction, often called the extra-systole, may be auricular, ventricular or nodal in origin. In a strict sense the term, "ectopic beat" is more descriptive, for the premature contraction is actually a contraction, the stimulus to which has come from some focus other than the normal, from some area in the auricle other than from the sinus node, or in the junctional tissue or the ventricle from some focus in these areas rather than along the normal paths from the auricle. Whether the etiological factor be anatomic or functional, the physiological process is the same, from some abnormal focus an impulse to contraction arises which is followed by cardiac response, early in time. Cardiac irregularity is probably most often due to premature contractions. These may be the result of nervous, toxic, infectious, or anatomic conditions.

The nervous factors may be broadly grouped as general and reflex. Under the general causes we include those disturbances of the nervous system classified as constitutional. Ectopic ventricular beats are often found in individuals of a nervous type particularly during some unusual mental or physical strain or shortly after the termination of such. Even in individuals who are not obviously of a nervous type the strain of some anxiety or exceptional mental work may be accompanied by the appearance of premature contractions. The reflex causes are mainly abdominal. Attacks of irregularity due to the presence of premature beats may be associated with chronic digestive disturbances, exacerbations of gall-bladder disease, abdominal distention or an acute indigestion with nausea and vomiting. Not infrequently the first appearance of such an arrhythmia occurs during the night, after the patient has taken a late evening meal of various rich and indigestible foods. Again patients have noted the onset of such symptoms after a heavy meal had been eaten when the pa-

tient was exceptionally tired. The relationship of gall-bladder disease to premature contractions is of interest. There has been much discussion as to whether the irregularity which is found in association with such disease is reflex in character or the result of myocardial disease, definitely organic in character, the result of infection of the myocardium from the gall-bladder. The ease with which ectopic beats can be excited experimentally by stimulation of the gall-bladder is presumptive evidence that clinically, such irregularity is reflex in character rather than myocardial. The toxic causes are many, of which two, coffee and tobacco, are most important. The patients themselves have many times noted that the drinking of coffee or the smoking of an especially strong cigar or even of a cigarette will be followed by the appearance of extra-systoles, the onset of a cardiac irregularity in which the heart seems to stop and then to start with a thump or "flop." Some drugs will also produce premature conditions, notably digitalis. This drug given to the point of intoxication will excite premature contractions through its power to increase ventricular irritability; indeed, the onset of the coupled pulse, the pulsus bigeminus, in which each normal beat is followed by an ectopic ventricular contraction, if occurring during the course of digitalis medication, is so commonly the result of overdosage with the drug, that its immediate withdrawal is indicated. The power of digitalis to produce various types of ventricular irregularity is not sufficiently appreciated.

It is now some forty years since the studies of various workers, notably of Romberg, made clear the fact that the acute infections are commonly accompanied by myocardial disease. The relationship of infection to the cardiac irregularities has been the subject of investigation ever since and has received not a little impetus from the clinical use of various instrumental methods. It may be stated that the onset of premature contractions may be attributed, in many instances, to the presence of some acute infection. Of such infections, diphtheria, influenza, the rheumatic infections, typhoid and pneumonia are especially prone to leave an injured myocardium and to be followed by a disposition to the occurrence of ectopic beats. It has been contended that the irregularities accompanying

the acute infections may be explained as toxic, the result of the effect of the particular toxin upon the myocardium, either directly or through the medium of the nervous system, but there is sufficient evidence at hand to warrant the statement that these arrhythmias may be definitely correlated with disease of the myocardium. It may be accepted that the later results of acute myocardial change are often responsible for persistent ectopic beats or other forms of irregularity in after life. The connection of chronic foci of infection with premature contractions in the sense that the latter are due to myocardial disease which has been initiated from the focus in question is much more difficult to maintain. A priori we may plausibly argue that the chronic infection is as likely to produce involvement of the myocardium as are the acute infections, but convincing anatomic studies are yet lacking and the theory that cardiac irregularities may be the remote result of a chronic infection though a chronic myocarditis is not proven. There remains for mention those types of ectopic beats which are due, so far as we can determine, to the presence of anatomic diseases, degenerative in nature. The individual with arterio-sclerotic cardiac disease is likely to manifest cardiac arrhythmia due to ectopic beats. While these are often of the ventricular type, all forms occur and it is a matter of clinical observation that auricular and nodal ectopic beats are far more common in association with definite organic disease, either acute infectious or degenerative, than as the result of purely toxic or nervous factors. Premature contractions are a common finding in people past middle life, and are especially frequent in all the forms of cardiac disease common in these years, in the hearts of hypertension and arterio-sclerosis. In a manner, age may be regarded as an etiological factor. It seems possible to explain the facts only upon the assumption that often these are the earliest manifestations of incipient anatomical change which is not otherwise accessible to demonstration. It is my opinion that auricular and nodal ectopic beats are not often found except in the presence of organic disease, while the more opportunity one has of studying the incidence and etiology of premature ventricular contractions, the stronger becomes the conviction that an anatomic cause for premature

beats should be carefully searched for in every case. It is not to be denied that in many instances the latter occur without any warrant for explaining them upon an anatomic basis; yet I believe that in the physician's mind, the possibility of their relationship to pathologic change ought not to be too easily discarded.

In passing, it may be stated that premature contractions occurring in the course of a cardiac decompensation often markedly diminish as the compensation is restored. It is probably not correct to attribute this improvement to the direct effect of digitalis; it is rather due to the restored function of the myocardium.

It is comparatively easy, in the large majority of cases, to recognize the ectopic ventricular beat by clinical means alone. In these cases the rhythm is fundamentally regular, the irregularities are noted as interruptions to an otherwise regular rhythm or perhaps as recurring with regularity. Following the premature beat there is a long pause, the compensatory pause, and when the pulse is quickened by exercise the arrhythmia disappears. As the rate slows again the irregularities may recur in even greater number, but, while the pulse is rapid, there is no premature contraction. While the ectopic ventricular beat is readily recognized upon the findings described, other varieties of ectopic beats do not permit of such satisfactory clinical diagnosis. All of the types of ectopic beats become less frequent as the pulse quickens, but the compensatory pause is usually absent after a premature auricular contraction and this feature, when the abnormal beats are numerous, makes difficult the differentiation from the absolute irregularity of auricular fibrillation. Ectopic nodal beats are hardly accessible to diagnosis independently of instrumental examination. But the general rule holds, since premature ventricular contractions are so much the more common, that the diagnostic criteria given above are of much clinical value.

The discovery of premature contractions is, in itself, no indication for treatment other than the assurance to the patient of the relative unimportance of the condition. The significance of this form of irregularity depends upon the underlying cause. In many cases, however, some form of treatment is required, partly because of the disturbing effect upon the patient provoked



by the irregularity, the anxiety which comes from the attacks of palpitation and the belief that heart disease is present, and partly because the ectopic beats may occur in short paroxysms in such frequency as to produce some cerebral anemia and cause spells of dizziness.

Treatment is primarily dependent upon the underlying etiology. In the nervous type, the reassurance of the patient concerning the insignificance of the arrhythmia, the removal, if possible, of the particular exciting cause, the general regulation of the life, particularly as to overwork, undue social activity, late hours, and directions about food and regular habits of eating may be sufficient. Often bromide must be prescribed, at least, for a time, until the patient has become satisfied that the irregularity does not portend sudden exitus. The same general observations apply to the group in which the irregularity results from some toxic cause, such as coffee. Tobacco, coffee, or any other toxin suspected of being the causative agent should be withdrawn. In both of these types of cases it may be necessary to resort to drug treatment, in order to control the arrhythmia. If the bromides fail to give relief, the quinine derivatives may be employed. Either quinine hydrobromide or quinidin sulphat may be used. Either may be given in doses of 8 to 12 grains a day in divided doses of 2 or 3 grains each. Relief is often obtained and much dependence may be laid upon this form of medication. To present the results of such therapy is very difficult. In a fairly large proportion of cases the disturbances that are attributable to the irregularity are purely subjective, dependent upon the patient's own estimate and report; it may be that the attacks occur regularly at night, often just after the patient has composed himself for the night and the physician never has the opportunity to determine for himself how aggravated the irregularity really is. Hence, the effect of medication cannot be determined by objective observation but must be measured by the patient's own statements. During an acute infection treatment should be directed to the underlying disease. Where premature contractions occur later, signifying chronic change in the myocardium, the quinine preparations may be used. Recurrence of the acute myocarditis should be guarded against by protection against fresh infections and care in the presence of such. The question

of the removal of chronic foci of infection is not easily answered. It is my opinion that such foci should be removed if there is reasonable ground for assuming a causative relation of the focus to the arrhythmia. Cardiac irregularities are often due to abdominal disease, as reflex manifestations; or it may be as the result of secondary infection. When the primary cause is removed the cardiac arrhythmia may disappear, yet one hesitates to advise, without the opportunity to elaborate with due consideration of the many angles of the subject, the prompt removal of foci of infection, which removal can only be carried out by a major operation. Infected teeth and tonsils may be removed, but the patient should be warned that no one of us knows whether or not in any particular case the focus of infection is responsible for the irregularity and no promise of relief should be given. I find it difficult to lay down hard and fast rules because I have none for myself; each case must be decided upon its own merits. If one follows set lines of procedure, as much harm may be done by the indiscriminate removal of foci of infection as by their entire neglect. The use of cardiac stimulants in these cases should be discouraged. If such drugs are followed by the cessation of symptoms, it is probable that the happy result is due to the relief of the patient's anxiety by the administration of medicine rather than from any favorable effect of the drug. Caffeine, strychnine, and digitalis are more likely to aggravate the irregularity than to stop it. They are not indicated. Perhaps the frequency of the ectopic beats is lessened in cardio-vascular syphilis after specific treatment. About that I may not make a positive statement. If the theobromine derivatives prove to effect in clinical medicine what they have shown to do experimentally—improve the coronary flow—this may offer some hope of relief in the cases associated with degenerative myocarditis of later years; a better nourished muscle may be less irritable, but there is no warrant for anything more than a guess in this connection in the present state of our knowledge.

Next to the premature contraction in the order of frequency of occurrence is auricular fibrillation. The causes of this condition may be grouped as five, of which the first three make up, if I may venture to estimate, at least 95%. These three are arterio-sclerosis, mitral disease

and hyperthyroidism. Fibrillation is found in more than 50% of rheumatic hearts with decompensation. Fibrillation may also occur in the course of acute infections and may result from reflex stimulation. While not denying its possibility, fibrillation upon a purely nervous basis is certainly rare.

Auricular fibrillation may be recognized clinically by the absolute irregularity (it is impossible to identify an underlying rhythm or to demonstrate compensatory pauses) by the marked aggravation of the irregularity after exercise as opposed to the contrary result when premature contractions are present, by the aggravation of a pulse deficit after exercise, and by the history or the presence of some one of the causative conditions just mentioned. The presence of arterio-sclerotic cardiac disease, of mitral disease with decompensation or of hyperthyroidism, is strongly presumptive evidence that a cardiac irregularity of any degree is due to auricular fibrillation. By pulse deficit we mean a difference between the ventricular rate counted at the apex and the pulse rate. In auricular fibrillation the ventricular rhythm is absolutely irregular; often the ventricle contracts before it has regained its full contractile power or has become normally filled with blood, the result of which is an ineffective impulse which produces a weak arterial impulse often so weak that no radial pulse is produced. When the ventricular rate is rapid, there will be many contractions so weak as to be missed at the wrist; as the rate is slowed, there is more time during each rest period for the ventricle to fill or to regain its full contractile power, so that the slowing of the rate is associated with a diminution of the pulse deficit, but a pulse deficit is a regular accompaniment of the rapid and irregular ventricular action of auricular fibrillation. As the ventricular rate is slowed in fibrillation, although the rhythm remains irregular, a pulse deficit is not necessarily present. With the slowing of the ventricular rate, the longer period of rest permits normal filling of the ventricle and normal recovery from the refractory phase so that each ventricular beat may produce the usual impulse at the wrist.

In the consideration of the treatment of auricular fibrillation we may discuss separately the chronic and paroxysmal types. The mere presence of the chronic type of fibrillation is not

an indication for treatment. Many elderly people have auricular fibrillation with a moderately slow ventricular rate and without symptoms of cardiac disease or of annoyance from the irregularity. This is also true of some patients with rheumatic heart disease. In the latter the condition is apt to be troublesome because of the arrhythmia alone. Since the rate in auricular fibrillation increases very notably after exercise and the rhythm becomes much more disorderly, the presence of this condition is likely to be more noticeable in younger persons whose normal activities frequently cause acceleration of the cardiac rate.

In the decompensated heart with fibrillation digitalis exerts its most constant and satisfactory results. The effect of this drug is to slow the ventricle by its power to inhibit the passage of impulses from the auricle to the ventricle. This effect of digitalis is principally upon the conduction tissue through the medium of the vagus; digitalis produces vagal stimulation and vagal stimulation impairs conduction. But digitalis has a specific action upon the heart in fibrillation, and exerts an effect upon conduction even after the vagus has been paralyzed by atropine. It is probably this particular response to digitalis which accounts for the striking results usually obtained from digitalis in auricular fibrillation. Digitalis will slow the rate and increase the cardiac output with the disappearance of the signs and symptoms of decompensation, but it does not restore the normal rhythm. The slow and oftentimes apparently regular pulse which ensues does not signify the restoration of normal rhythm; the ventricular rhythm, if carefully examined, will be found to be absolutely irregular. In the use of digitalis in these cases the aim of the treatment is to get the full effect of the drug; the old rule of Withering applies: "Continue the digitalis until its effect is shown upon the heart, the stomach, the kidneys, or the bowels." The drug should be given until the cardiac symptoms recede or definite signs of the physiological effect indicate that full effect of the drug has been obtained though the desired therapeutic result is not obtained. The digitalis may be given according to the method of Eggleston whereby the physiological dose is given within 24 hours, the drug is then omitted for 48 hours and afterwards given in a so-called equilibrium dose of 20 to 30 minims of the tinc-



ture once a day. The condition for the use of this method is that the patient must not have had digitalis within ten days. If digitalis has been taken a few days before the employment of the Eggleston method it is to be expected that the body contains a certain amount of the drug, which added to the quantity given to produce physiological effect will almost certainly produce a toxic effect. According to this method, 1 cc. of the tincture is given for every seven pounds of body weight after making allowance for excess weight which is due to edema. This means for a patient with a net weight of 140 pounds a dosage of 20 cc., 5 drachms, to be given within a period of 24 hours. The drug should then be omitted for two days and again administered in the equilibrium dosage as mentioned already. Owing to the variable response of different individuals, some toxic effects are not uncommon in spite of rigid adherence to the precautions stated. If it is not deemed wise to employ this scheme, the drug should be given in fairly large doses until the desired effects are produced and then cut down to the amount necessary to keep the heart under control. I cannot leave this subject without calling attention to the fact that digitalis is a potent drug which is capable of causing dangerous symptoms. The change in our conceptions as to the dosage of digitalis which has marked the past decade has apparently led many men to forget the potency of the drug for harm as well as good. While the doses advised by a previous generation were far too small, the fact that larger doses are advisable and to the advantage of the patient does not mean that the drug is harmless. It is rather to be emphasized that the larger doses carry some risks to the patient and demand greater watchfulness on the part of the physician. In estimating the effect of digitalis upon the heart, the cardiac rate should be counted over the apex; readings of the radial pulse are not reliable.

Though quinidin may restore and maintain the normal rhythm, it is not to be regarded as useful in the treatment of cardiac decompensation. The quinine derivatives are cardiac depressants, impairing rather than increasing cardiac tone and, while there have been occasional cases in which decompensated hearts have shown improvement of function after the restoration of normal rhythm by quinidin, its use in decompensation is not advised. Where quinidin has

acted to restore compensation with the return of normal rhythm, it has probably been due to the predominance of the favorable effect upon cardiac output of the regular rhythm over the depressing effect of the drug itself. There is not time to discuss here the indications for the use of quinidin, but it may be said that the use of quinidin in chronic fibrillation is principally to relieve subjective distress in those individuals who are greatly annoyed by the irregularity. Where the drug is used, the heart should be compensated and the digitalis withdrawn. A test dose of 3 grs., given twice with an interval of four hours, should be employed on the first day of the treatment. If no untoward symptoms occur, the attempt to restore normal rhythm may be undertaken. Three grains may be given every two hours for seven doses and this continued for 3 days. If the irregularity persists, the dose may be increased to four grains every two hours for seven doses a day and kept up for another four days. If the rhythm is not restored at the end of the week, the drug should be stopped. Rarely does restoration of normal rhythm occur after seven days of failure to respond. The drug should be withdrawn at any time the symptoms of cinchonism appear, or if the ventricular rate goes as high as 130. After restoration of normal rhythm quinidin may be continued in a daily dosage of from 5 to 10 grains given in divided doses. From 5 to 10 grs. a day have been given through long periods without disturbance, but the patient should be warned of the symptoms of quinine intoxication, not forgetting the visual disturbances. The treatment of paroxysmal fibrillation includes the removal of the cause, symptomatic treatment, and the use of quinidin. Paroxysmal fibrillation is usually due to one of three causes, mitral disease, and hyperthyroidism, in both of which it appears that the paroxysms presage the eventual establishment of a chronic fibrillation, and the degenerative changes in the myocardium which ensue upon a coronary thrombosis. If there is a history of coronary thrombosis the attacks of auricular fibrillation may be readily explained. Where there is an old mitral endocarditis especially with stenosis, fibrillation may be expected. In the absence of rheumatic heart disease and a history of coronary thrombosis, the occurrence of paroxysms of fibrillation is an indication for a determination of the basal metabolic rate, so

often are these attacks due to thyrotoxicosis. Where the latter is present a successful thyroidectomy will put an end to the attacks; indeed, it is not uncommon to have restoration of normal rhythm after operation in patients who have had chronic fibrillation; it is also well established that quinidin is especially ineffective in thyrotoxicosis, while after thyroidectomy the patient, previously refractory, will often respond. At the time of the paroxysm of fibrillation, the use of sedatives is often of value in quieting the patient, allaying his anxiety and thus contributing to recovery. While the cardiac rate is rapid, digitalis should be given; after the rate has been slowed to within nearly normal limits, quinidin may be given in doses of three or four grains every four hours for several days or until the restoration of normal rhythm; thereafter this drug may be continued in daily dosage of 5 to 10 grains, in divided doses. While quinidin will not always finally prevent the attacks, it does have a favorable effect in diminishing their frequency.

Paroxysmal tachycardia is a condition in which there is the sudden inception of a rapid rate; the paroxysm is characterized by the sudden onset of the tachycardia and usually by a sudden offset, although the return to normal rate may be gradual. The rhythm is not always regular; paroxysms of fibrillation have just been described. There is some dispute as to whether or not paroxysmal tachycardia always arises from an abnormal focus. That opinion has been held, but the view that such attacks may result from abnormal stimulation of the usual pacemaker is no longer entirely rejected. The rate becomes very rapid, often around 180, and many cases have been described in which the rate was over 200. I recall two cases, one in a man about 55, with a rate of 210, and another recently seen in a child of 17 months, with a rate of 230. The attacks are of variable duration. There may be short runs of tachycardia barely perceptible to the patient yet which are to be classified as paroxysmal tachycardia. The usual attack last from a few minutes to hours; more severe attacks will persist for days and may occasionally end fatally, although such termination is unusual. In the greater number of cases the attack is significant because of the subjective sensations produced and is not associated with signs of cardiac failure. The patient notes the

rapid action and cannot restrain some anxiety; there may be no apparent breathlessness, partly because the knowledge of the condition leads the patient to refrain from exertion. Frequently there is a sensation of tightness in the chest, a sense of fulness under the sternum, but this rarely amounts to pain. Where the attack is of longer duration there may develop cyanosis, dyspnea, swelling of the liver and some edema of dependent portions; with persistence of the paroxysm the pulse pressure falls, often quite notably, and cardiac failure begins to develop. With the sudden cessation of the attack the patient immediately feels relief and within a short time is free of all the symptoms. These attacks develop mainly upon a nervous basis, by which we mean that in a given case neither history, signs, nor symptoms of organic heart disease can be discovered; upon a rheumatic basis, in which there is demonstrable rheumatic heart disease or the history of some disease of the rheumatic group which is likely to be followed by cardiac involvement, and finally, upon an arterio-sclerotic basis. Paroxysmal tachycardia is often associated with arterio-sclerotic heart disease and this is the group to which fatal attacks are almost confined. The treatment is directed first of all to the exciting cause. Even in those attacks due to organic disease, the attack is usually precipitated by some nervous factor. To protect the patient from undue physical, mental or emotional strain is a first principle of treatment. Much that has been said about the avoidance of dietary indiscretions in the prevention of paroxysmal fibrillation applies here. Perhaps the quinine preparations are of value in diminishing the frequency of these attacks. They should be tried. It is difficult correctly to appraise them. During the attack the best treatment is to administer a sedative; if the patient will sleep, the attack usually stops. Bromides are especially of value. Morphin is dangerous in this group of cases—patients of a nervous temperament with a tendency to recurrence of the attacks—but may have to be used in cases of long duration, especially in older people with arteriosclerosis. Many procedures have been found of value in individual cases. Some patients can stop the attacks by holding the breath, or by taking a drink of water; in some, vomiting will put a stop at once to the rapid rate. It is in these cases that vagal pressure often



effects prompt relief. In general, the prognosis as to life is good but the attacks often occur with such frequency and severity as to become very burdensome.

The irregularity which results from disturbances of conduction is due to partial heart block, occasional failure of ventricular response to auricular impulse. In complete block the auricular and ventricular rates are independent of each other, but the rhythm of each is regular. The characteristic of ventricular contraction in complete block is not irregularity but bradycardia. The rate is usually below 40. Incomplete block may also show a regular rhythm, dependent upon whether or not the "dropped beats" come at regular intervals, as happens in the grades of block in which every second or third auricular impulse fails to excite a ventricular response. Such a block may cause a slow ventricular rate. In my experience this type of block is rare.

The causes of heart block are several. Digitalis, the effect of which upon the conducting tissue has already been mentioned, and other drugs may be causative. Acute infections, the rheumatic infections, influenza and particularly diphtheria, are often responsible. Usually the conduction disturbance disappears as the infection recedes, but in diphtheria the block may be permanent and occasional cases are seen with the slow ventricular rate of complete block for years after this infection. Incomplete block is most often the result of toxins or infectious processes. Complete block, dissociation of auricle and ventricle, may result from the same causes, but is almost never permanent under these conditions except after diphtheria. The common cause of persistent complete block is arterio-sclerotic degenerative myocarditis involving the Bundle of His. Syphilis is often mentioned as a cause of this type and especially through the presence of gumma in the Bundle, but is actually an infrequent cause.

Incomplete block with arrhythmia is characterized by the occasional failure of ventricular response to auricular impulse. Clinically, this is shown by the occurrence of long pauses, not only at the pulse but also over the heart itself. When a long pause at the wrist is due to an early ectopic ventricular beat which has not produced a peripheral impulse, auscultation at the apex will reveal the presence of the early prema-

ture contraction; in incomplete block, auscultation at the apex reveals a silent period which is synchronous with the long pause at the wrist. It is obvious that some ventricular beats are missed altogether. Neither radial pulse nor cardiac contraction may be discovered during this long pause. Unless jugular pulsation indicative of auricular activity can be observed during the pause, no other sign of incomplete block is available without instrumental demonstration.

The treatment of block is concerned first with the withdrawal of an exciting toxin and with the control of a causative infection. The chronic forms of block, either partial or complete, have hitherto proved refractory except in those cases due to syphilis. Of recent years atropine, adrenalin and thyroid have been recommended by various workers. Quite recently barium chloride in small doses has been highly spoken of for the treatment of the syncopal attacks, Stokes-Adams disease, either of complete or incomplete block. About no one of these drugs may definite statements be made at present.

It remains to discuss the type of irregularity known as sinus arrhythmia. This is also known as respiratory arrhythmia, and Mackenzie referred to it as the "youthful type of irregularity." It is the result of increased vagal effect upon the sino-auricular node or of heightened response of the nodal tissues to vagal control. The condition is found particularly in the extremes of life, in children and old people and in many individuals of a nervous type. It is often carried well on through the period of adolescence. There are alternating periods of a slow rate with one more rapid, the rapid rate being synchronous with inspiration and the slow with expiration. Exaggerated breathing will increase these phasic variations. Instrumental examination will show normal impulse formation, normal conduction and normal ventricular response. This type of arrhythmia is physiological, offers the prognosis of a healthy rhythm and calls for no treatment. Further diagnostic criteria are the diminution of the irregularity as the pulse quickens after exercise, and the absence of symptoms, signs, or history which warrant the diagnosis of cardiac disease. It is important to recognize this benign and frequent irregularity, for oftentimes a bad prognosis based upon its presence is the source of much distress to a patient.

## MEDICAL EDUCATION\*

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Of the many subjects with which a physician has to deal, none is of any greater importance than the training of young men who are to take up the work in the future. Hyppocrates recognized this principle, and ever since that time physicians, as a whole, have taken an active interest in the future of the profession.

The advent of scientific medicine has dampened the ardor of the men engaged in general practice. It is not because of a lack of interest, but a lack of contact between the teachers of medicine and the men in general practice. It is because of the submission of the men in the active practice of medicine to the dictation of the teachers of medicine who, in greatly increasing numbers, are becoming more and more the full time teachers who have no means of understanding the art of the practice of medicine. Many of them, indeed, know nothing of the practice of medicine at all. In my experience they are men of fine principle and are very desirous of having their students efficient in the special branch for which the individual is responsible. Furthermore, they are men who know the branch they are intrusted to teach much better than it would be possible for any but the full time teacher to know. But, in so far as knowing the application of the subject matter to the treatment of the sick, they could not be expected to have more than a mere academic knowledge.

The result is that the present student of medicine reaches his third year in the study of medicine with no idea of the meaning of the profession he intends to enter. He has had four years in high school, two years in the university, and two years in the medical department. And yet, he has no more knowledge of the practice of medicine than he would have had, had he taken up engineering. He has been constantly in school all his life and has been too busy in learning what is taught by his various teachers to come in contact with the great world and its many deficiencies and difficulties. He has been engaged in exact science, and, if he has

mastered the subjects presented to him, he is supposed to be eminently prepared to enter his third year, and for the first time in his life he begins to come in contact with men who actually treat the sick.

In order to reach this stage of his career successfully, he must have a particular taste for science and research, or his task will grow so irksome that he will eliminate himself or will be eliminated by the medical school for inefficiency. On the other hand, he may have little human sympathy, few qualifications and no inclination to practice the art of healing, but may still have a superior scholastic standing in his school.

Unless his curiosity gets the best of him, he may spend four years in medical college without ever meeting a man who practiced medicine and without ever hearing the history of a sick or injured patient. In his fifth and sixth years, he comes in contact with men who specialize on limited subjects. Many of these men never practiced general medicine in their lives, and more and more of them are becoming men who are working on salaries and are handling patients, principally of the pauper class who are used for research purposes. And these men may never have had any experience in handling any but pauper and referred patients. A general practitioner may be a curiosity to a senior medical student.

Dr. William Mayo's definitions of the general practitioner and the specialist are:

"The general practitioner is a man who knows less and less about more and more; and, a specialist is a man who knows more and more about less and less."

Both definitions are concise, but very expressive.

You may have known a man in your life who could shuck more corn than it would seem possible for one man to shuck. But, he was not necessarily the best farmer in the country. He was a specialist. If farm problems were to be discussed, he would probably not be considered. From the viewpoint of farming, you could pick from any community the men who know but one phase of farming, but know that phase better than any of the rest. And then, you would find a man who probably could not do any one thing as well as any of these specialists, but

\*Presidential address at Annual Meeting of Southern Illinois Medical Association at Mt. Vernon, Nov. 8, 1928.



who would know more about farming in general than all of them put together.

I do not intend to belittle the specialist on the farm or in the medical profession. The fact is that the greatest men of our profession in the past have become specialists, and still remain the leaders of medical thought. But, we must not forget that the specialists of past generations graduated from the general practice of medicine into their specialties, and the majority of them continued to keep in close contact with medicine in general. Many of our best specialists today are no closer to the ideas of general medicine than are our dentists. Have you ever heard any of them boast about the fact that they know nothing of medicine except that which pertains to their special branch?

Specialists and research workers have delved into the minute details of medical science and have produced ideas that will live forever. They have placed medicine upon a basis that was not dreamed of fifty years ago. They have worked and toiled, with but little encouragement, just as geniuses of all kinds have done. No intelligent individual would ridicule the specialist or the research worker. At all medical gatherings the science of medicine is eulogized, and every eulogy is deserved by those who have added to the science of medicine.

On the other hand, however, the eulogy of the old family physician is full of pathos. The orator brings tears to our eyes with the description of his sacrifices, his poverty, and his devotion. And, when our tears are dry, we try to forget him.

The art of the practice of medicine has received very little constructive thought at the centers of medical learning during the past generation. Science has held our attention so completely that our medical education is becoming so filled with mechanical manipulation that we forget that our typhoid patient has anything else but typhoid. We pass him by without realizing that he has a mind and a soul. We ask about his father and mother only to get his family history into our records. We ascertain that he has a wife and a child. But, is it because we have an interest in his welfare? Or, is it merely for a scientific record?

When there is suffering in a family, the mother, father, brothers and sisters are all anxious to see the sufferer relieved. There is noth-

ing that interests the patient as much as relief and consolation. He wants assurance. Death must be met in spite of science. Surrounded with every thing that science can boast, thousands of individuals are doomed to invalidism. All science can do is to absent itself from the presence. Then comes the artist who has made the medical profession the most beloved of all professions. It is the artist who has placed the halo upon our brows.

In order to allow scientific principle to be executed, it is necessary to have the art of medicine applied. Who sends the stricken individual to the specialist? Who diverts him from the charlatan? From a purely scientific viewpoint, is it wise to leave the rural districts depleted of medical aid? If our young men are educated to such a point that they are unable to find solace in anything but a specialty, where are their patients coming from? If the slightly indisposed are to consult the druggist, the nurse or the cure-all, it must be their duty to determine the advisability of medical attention. It must fall to their lot to direct medical supervision and to create medical thought.

When we look into statistics and learn that only ten per cent. of the human ills can be classified as amenable to scientific diagnosis, classification and treatment, and that only ten per cent. can be treated scientifically—in the true sense of science, it gives us an idea of the magnitude of the field in which the art of medicine must be applied—if the best results are to be obtained.

It is my opinion that human ills cannot be handled as well by any method as by a single body or profession who look upon them as a whole. The medical profession cannot be divided into a scientific and a non-scientific body with different ideas and ideals without coming to cross purposes. Before such a division is effected, it will be well to make an adjustment. That adjustment must be made in our schools of learning. Teaching must adjust itself so that science will be made an adjunct to the practice of medicine rather than to insist that medicine must be taught purely as a science. The practice of medicine is not purely scientific, and it never can be.

Many pathies have come and gone. The regular physician has lived through it all absolutely because he has accepted any thing that was

workable and has never confined himself to any system that was not amenable to wide variation. He uses the drugs that produce certain physiological effects. If the dosage in one case produces the proper effect, that is the dose for that patient, but he may change it for another when it does not produce the effect. He knows that as alcohol produces different effects in different individuals so do all other drugs. He does not use mental suggestion as a cure-all, but he uses it, nevertheless. The fact that the quack or the fanatic utilizes some remedy will not deter him if he finds virtue in their methods. Neither will he discard all but the scientific until science is able to cure all things,—and that time will probably never come.

As we have worked to relegate useless remedies to the scrap heap, so we must work to retain and revive methods that have stood the test of time. We, ourselves, are unable to discard many things scientifically unsound. None of us are materialistically enough inclined to lie in pain without a murmur even though we know the ministrations that are at hand are useless. If I were in pain, I would bless the individual who applied useless remedies with good intention, and I would curse the individual who ignored my suffering. Useless treatment properly applied is far better than none at all. In times of necessity, such treatment has deserved and received the commendation of both high and low. And, if credit were never given except where material benefits were bestowed, the healing art would not now stand on its present pinnacle.

Science is exacting. It is interested in diagnosis first, and treatment last. That is perfectly proper when it can be done. But, the unscientific mind does not grasp the idea. Most of our patients are wholly unscientific and are looking only for relief. We, ourselves, want relief while the diagnosis is being made. Our families want some consolation, and when the diagnosis is made we do not want to be abandoned by the medical profession because science is unavailing. Much can be done by the profession in hopeless cases if we are trained to handle them. Even in cases where scientific methods are used to the best advantage, much can be done to add to the happiness of the patient and his family by the application of art. So, we learn that the art of medicine comes into

play in all cases while science is applicable in only a limited number.

The changes advisable are not so easily determined. It would be presumptuous for any one individual or even any one class of medical men to presume to know just what the curriculum should be. The degree of M. D. has various meanings at this time. Perhaps there should be more than one degree of medicine. The object in bringing up this subject is not to criticize any class of the profession, but is to present ideas for thought. The teachers of medicine are doing their best to produce the most efficient medical men possible. It is easy to criticize, but much harder to improve the methods.

The independent doctor is rapidly disappearing from the field of medicine. At the rate we are now going, in twenty-five years he will be no more. We realize that the medical field has grown so broad that it is no longer a one man's game. Nevertheless, every family needs its family physician as badly today as it ever did. Some individual must be provided who will visit a family when any member of that family becomes indisposed, and who can intelligently handle the family as well as the patient.

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### THE RELATION OF ASTHMA TO BRONCHO-PULMONARY INFEC- TIONS AND INFLAMMATIONS\*

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Although the relation of bronchial asthma to bacterial infection is still an unsettled problem there are many clinical aspects of this relation which are well worth our consideration. In the literature on asthma one finds numerous papers dealing with upper respiratory infection, particularly sinus disease, and its etiologic and therapeutic bearing on bronchial asthma. However, with the exception of a very few papers, among the most important of which is that of Peshkin,<sup>1</sup> very little is said about the association of asthma with infection of the bronchi or

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lungs. It is this latter phase of asthma that I wish to take up in this presentation.

It hardly needs to be mentioned that protein sensitization is responsible for a large proportion of cases of asthma. This is a well established fact, repeatedly shown by many observers and successfully applied in my own experience. However, it must also be admitted that there are numerous instances of asthma in which protein sensitization cannot be demonstrated and also many cases of protein-sensitive asthmatics in whom additional factors are at play in the causation of their asthma. Many of these cases are apparently associated with bacterial infection.

That bronchial asthma and infections of the bronchi and lungs are frequently associated is a common observation evident to every medical man. It is true, however, that the relationship of these two conditions is not the same in every patient: there are several ways in which bronchopulmonary infection and asthma may be associated. The treatment of the individual patient will depend on the manner of this relationship.

It is the purpose of this paper to classify the relationship of bronchial asthma to bronchopulmonary infections and inflammations, to illustrate these classes with suitable examples, and to point out the importance of each class. In this presentation tuberculous infection of the lungs will not be considered, nor will there be any attempt made to discuss the debated question of bacterial allergy and its relation to bacterial infection. Although no statistics are presented at this time, the clinical impressions are based on an experience with about one thousand cases of asthma.

#### *Class I. Non-allergic Asthma Following Bronchopulmonary Inflammations.*

A very large percentage of asthmatics give a history of preceding infection or inflammation of the lower respiratory tract. This initial infection may take the form of a chronic bronchitis, or a more acute condition such as acute bronchitis, pneumonia, influenza, or whooping cough. Many of these asthmatics are entirely negative to all skin tests. Before one fully accepts such an explanation for the asthma one must satisfy himself on two points: the absence of protein sensitization and the reliability of the diagnosis of the preceding infection. The

asthmatics in this large class divide themselves into two main types which differ considerably in their pathology and treatment.

#### *Subclass A. Those following chronic bronchitis.*

Many cases of the non-allergic type are a direct consequence of chronic bronchitis. This occurs more commonly in individuals past middle life. However, it has been recognized that this may occur occasionally also in younger individuals and even in children. In such instances it is important to rule out the possibility of an allergic or sensitization form of bronchitis. Very frequently the bronchitis may not be of a chronic nature but have a tendency to take the form of acute recurring attacks, each individual attack or series of attacks being followed by asthma. The importance of recognizing this group lies in its therapeutic possibilities. It is this group of cases which can be helped considerably by bacterial vaccines.

#### *Subclass B. Those following acute inflammation, especially with residual lung changes.*

These cases follow such acute pulmonary processes as pneumonia or influenza. The asthma may come on immediately after the acute infection or there may be an intervening cough for a variable interval. Very frequently it is due to a failure of resolution of the infiltrative process. It is in this type particularly that x-ray therapy has given such brilliant results. Harkavy<sup>2</sup> has especially called attention to the rôle of unresolved pneumonias in bronchial asthma. In a series of 160 cases of asthma he found nine whose condition was a result of unresolved pneumonia, chiefly of the influenza variety.

The following is one of a number of similar cases which illustrates the history of this type:

*Perry F.*, aged nine was first seen on June 5, 1928, with the complaint of dyspnea, wheezing and cough of a year's duration. These symptoms followed an attack of pneumonia. She has had measles and whooping cough; his tonsils and adenoids were removed four years ago. His aunt has asthma.

Physical examination was negative except for the chest findings typically found during the asthmatic state. All protein skin tests were negative. The urine and blood were essentially normal. X-ray of the chest showed a diffuse pulmonary infiltration.

On August 21, 1928, the boy was given x-ray therapy posteriorly over the chest, and on September 8, anteriorly. About a week following the

second irradiation the asthma and cough disappeared. There has been a slight recurrence of his symptoms in the last few days and it is planned to give him another course of x-ray therapy.

*Class II. Allergic Asthma Following Bronchopulmonary Inflammations.*

There are many instances of asthma of the allergic, or protein sensitive type, which follow pneumonia, bronchitis and similar infections. Without sufficient investigation the history of these asthmatics usually mislead us into considering them as the bacterial type. It seems that the inflammatory condition of the bronchial tubes favors the localization of the allergic symptoms to that part of the body. It has been pointed out by Vaughan<sup>3</sup> and others that the occurrence of this non-specific factor, such as bronchial inflammation, mechanical irritation of the skin, mechanical obstruction in the nose, in great part will determine whether and where the specific allergic lesion will take place. For instance, an individual may be sensitive to feather dust but may have no clinical symptoms because of his being in a state of "allergic balance." If, however, a sinus infection supervenes, the nasal mucosa may be sufficiently irritated to allow the localization of the sensitization with the production of an allergic rhinitis. Whether this lowered resistance of the bronchi to the allergic substance is due to an increased permeability or to an increased irritability or whether it is due to an entirely different process, is an unsettled matter.

This type of asthma may follow either an acute condition like pneumonia or influenza; it may follow a chronic bronchitis or recurring "cold"; or it may follow a seasonal pollen asthma. The importance of this group lies in the recognition of the allergic factor, as failure to do so will produce unsuccessful results.

*Subclass A. Allergic asthma following pneumonia or influenza.*

Asthma following pneumonia is usually of the non-allergic type. However, allergic asthma after such illness is found frequently enough to warrant an investigation into the allergic factors in such cases. The following case is a typical example of several others that I have encountered:

*Frieda S.*, aged 17, office clerk, first seen on October 21, 1926. She complained of dyspnea, cough and wheezing, occurring in attacks, recently about once a week. Her complaints are of five years duration. In the spring of 1921 she had influenza, following which

the cough persisted and was followed by asthma in July of the same year.

Other essential points in the history are: Measles as a child, questionable scarlet fever, whooping cough at ten years of age, and tonsillectomy at the same age. An older brother has had asthma and a sister has asthma.

Examination showed loud wheezing râles, some emphysema, and a right kyphoscoliosis. The nose and throat were negative.

The sputum showed a predominance of streptococci, staphylococci, and micrococcus catarrhalis; there were no tubercle bacilli. The blood count and urine were normal and the Wasserman test was negative. The x-ray showed an appreciable degree of peribronchial infiltration or fibrosis.

The skin tests showed repeated positive reactions to cat hair. The patient had no cat at home. However, in accordance with my experience in similar cases where the source of animal epiderm sensitization cannot be located, I thought it advisable to try desensitization therapy. Injections of cat hair extract were begun on November 9, 1926. The patient had two light attacks of asthma on December 26 and 31, respectively. The treatment was continued until April 19, 1927. From January 1, 1927, to January 17, 1928, at which time we had the last report from the patient, there has been no recurrence of the asthma.

This, then, is evidently a case of allergic asthma, following an influenza, and successfully treated by allergic methods.

*Subclass B. Allergic asthma following bronchitis, especially of the chronic type.*

Whenever asthma follows a chronic bronchitis we are apt to make a hasty diagnosis of bacterial asthma. That such is not the case in all asthmatics giving a history of bronchitis can be definitely shown in many instances. The chronic bronchitis may be merely the localizing factor while the superimposed allergy has to be investigated and treated. Now, it is true that many of these cases have never had an infectious bronchitis to begin with, but have existed for considerable time prior to the dyspneic stage as cases of allergic bronchitis. Nevertheless, there are some cases where the allergy is secondary to a definite infectious bronchitis.

*Mrs. J.*, aged 54, housewife, first seen on April 19, 1928, complaining of asthma of three years duration. Her symptoms are more troublesome in winter. She says that she had had bronchitis every winter for seven years. Examination disclosed typical findings of asthma. Because of the age of onset of the asthma and because of the definite history of preceding chronic bronchitis it was thought that sensitization tests would be useless. However, tests were made and much to my surprise resulted in several positive reactions. These were barley, asparagus, beans, wool and feathers. Sub-



sequent developments showed that the feathers were chiefly responsible for her paroxysms.

*Subclass C. Perennial asthma following a seasonal pollen asthma.*

Many cases of hay fever develop a seasonal asthma as a result of the pollen sensitization. If the pollen sensitiveness is not mitigated there may occur in time a continuance of the asthma outside of the pollen season. I have many records of such histories. The following is typical:

*Elk R.*, aged 50, first seen in October, 1927, complaining of a constant all-year round asthma. He has had autumnal hay fever for 30 years, which later was complicated by seasonal asthma. For the last five years he has had asthma throughout the year. Skin tests showed positive reactions to the ragweeds, cat hair and dog hair. It developed further from his history that he had a cat up to two years ago, at which time he disposed of it. Following that he had no asthma until he got a dog, which he has at present. Shortly after the acquisition of the dog the asthma recurred.

Subsequent repeated clinical trials showed this man to be sensitive to the hair of his dog.

*Class III. Bronchopulmonary Infections in the Course of Asthma.*

*Subclass A. Bronchitis, acute or chronic.*

Bronchitis, either acute or chronic, occurs very commonly in the course of asthma; this is apparently the result of the asthma. The abnormal conditions in the blood supply and the stasis of the bronchial secretions predispose to bronchial infection. Perhaps this infectious factor is present in all cases of chronic asthma, but in some cases it is particularly pronounced. Hurwitz<sup>4</sup> has also called attention to the importance of this type. It is essential to recognize this element of infection, as treatment based on the purely allergic findings in such a case may be unsuccessful. The secondary infection very frequently must be treated. Vaccine therapy has been of great help in this group. The following is a typical case history:

*Charles N.*, aged 4, first seen on July 19, 1927. He has had perennial asthma for the last three years and hay fever for the last two years. He also has urticaria and had eczema from the age of four months to two years. His mother has hay fever and his maternal grandmother has asthma.

Examination showed a marked barrel-chest with typical findings of asthma. The boy was well developed and exceptionally well nourished. Skin tests showed many positive reactions, including ragweed and grass pollens, a number of foods, feathers and hairs.

The offending foods were eliminated from the diet, feathers were removed, and pollen injections were given. In spite of the above measures the improvement was only moderate. There continued to be considerable asthma and a great deal of bronchitis. A course of autogenous vaccine practically eliminated all bronchitis and remaining asthma.

*Subclass B. Pneumonia in the course of asthma.*

Whether or not the individual case of asthma is primarily due to bacterial infection or to protein sensitization pneumonia is a frequent sequel. This is, of course, the most important cause of death from asthma. In many instances there are repeated attacks of pneumonia. It is important to recognize the presence of this tendency, as a great deal may be done to forestall such complications. Some of the measures which may be employed with some degree of success are avoidance of exposure to severe weather conditions, the proper use of bacterial vaccines, and quartz light therapy; and in some cases a change of climate may be advisable.

*Class IV. Asthma Erroneously Diagnosed as Bronchopulmonary Infections.*

Many cases of asthma, particularly in children, are diagnosed as pneumonia, influenza, bronchitis, or adenotonsillitis. This failure to recognize the true nature of the condition in children is due to the fact that in them the asthmatic syndrome may be entirely different from that in the adult. Kahn<sup>5</sup> has called repeated attention to this dissimilarity. In children fever and prostration are common symptoms of asthma while definite dyspnea may be entirely lacking.

There is another condition, also more prominent in children, to which little attention has been paid in the past. Among others, Waldbott<sup>6</sup> has shown that protein sensitization may affect the bronchial tubes with the production of cough and no other symptoms. This is designated as "allergic bronchitis." Many of the chronic or recurring unexplainable coughs in children will undoubtedly be found to be due to a protein sensitization.

## SUMMARY

1. A classification is presented showing the various ways in which bronchial asthma and bronchopulmonary infections may be associated.

2. Bronchopulmonary infections or inflammations are frequently the initial cause of asthma.

3. Asthma followed by such inflammations may be either of the protein-sensitive or the non-sensitive type: the treatment of these types differs materially.

4. Bronchopulmonary infections are frequently the result of chronic asthma.

5. Such complicating infections in the course of asthma must be recognized and treated whether the asthma is allergic or not.

6. Many erroneous diagnoses of respiratory infections are made when the true nature of the condition is a bronchial asthma or an allergic bronchitis.

185 N. Wabash Ave.

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#### DISCUSSION

Dr. R. O. Stites, Industry. He said something about vaccines. I wonder whether he used stock or autogenous? I have utterly no faith in any stock vaccine except typhoid as a prevention.

Dr. S. M. Feinberg, Chicago: As to the matter of vaccines, we have used both stock and autogenous. When we use stock vaccine we use them from other patients who have a similar condition. That is, we get the streptococcus and staphylococcus and pneumococcus from patients who have asthma, and use them in the treatment of similar cases.

### A STUDY OF RUPTURED AORTIC ANEURYSMS

JAMES G. CARR, M. D., AND LAURENCE E. HINES, M. D.

From Northwestern University Medical School and Cook County Hospital

CHICAGO

A review of the post-mortem and clinical findings of 100 patients who died at Cook County Hospital of cardiovascular syphilis revealed 15 who had ruptured aortic aneurysm. This high percentage (15%) indicates a greater incidence of rupture in syphilitic disease of the aorta than is commonly appreciated. Our study of the 15 cases is made with particular reference to age,

sex, symptomatology, clinical diagnosis and site and reference of rupture.

The average age at which rupture occurred was 38. The oldest patient was 61, the youngest 24. Only two of the 15 were women, whereas 28 of the whole group were women. Table I shows the age incidence.

The duration of symptoms which could be attributed to the aneurysm varied from 1 day to 5 years. Some difficulty has been encountered in differentiating the symptoms prior to and subsequent to rupture. As a rule the symptoms following rupture are of shorter duration and more severe than those preceding the rupture, but in some cases when the rupture is gradual and associated with a reparative process, it is not possible to differentiate sharply.

Pain was the most constant symptom. It was present in 14 cases, either before or after rupture of the aneurysm. In nine it was described as severe, lancinating, or stabbing, while in five it was referred to as dull or aching. Dyspnea was present in all but two, both aneurysms of the abdominal aorta. Hemoptysis, next in order of frequency, was present in 6 patients, either as marked hemorrhage at the time of death or as blood streaked sputum from 1 to 14 days before death. The frequency of the symptoms is indicated in Table 3.

The location, degree, and character of the pain varied greatly. In many cases there was no pain until a short time before death. In others, pain had been present for years and was greatly aggravated at the probable time of rupture. Excerpts from the clinical records are given to illustrate variations of pain and other symptoms.

Case 1: J. P., a man, aged 29 years, worked in a foundry up to 9 days before death. While laughing and joking with comrades, he suddenly fell, became stiff and unconscious. When aroused, he complained of severe, sharp pain to the left of the sternum. This was aggravated by cough and deep breathing. Blood streaked sputum was expectorated, fever and signs of consolidation in the left lung developed, the pain persisted, and he died 9 days after the first symptom. A clinical diagnosis of pneumonia was made, but the necropsy revealed an aneurysm of the arch which had perforated and eroded into the left lung and pulmonary artery. In all probability, the first symptom presented by this man was due to the rupture of the aneurysm.

According to our statistics and those of others (Leman<sup>1</sup>) aneurysm ruptures into the pericar-

1. Leman, I. P., Aneurysm of the Thoracic Aorta, *Amer. Journ. of Med. Sc.* 152, p. 210, 1916.



dial sac more frequently than into any other viscus. The symptoms of rupture into the pericardium are illustrated by the following case report:

Case 2: J. C., a man, aged 58 years, known to have had syphilis for 24 years, had no symptoms referable to the heart or vascular system until the day before death, when suddenly a terrifying pain developed over the clavicles and spread down to the epigastrium. A squeezing, oppressive sensation behind the sternum was associated with the pain. After 10 minutes, the severe pain subsided to a dull epigastric ache and nausea. Eighteen hours later, severe substernal pain recurred and persisted 1½ hours until death. Such symptoms as these are similar to those of severe coronary disease. Findings which should differentiate the two conditions are physical signs of a pericardial effusion, particularly the striking weakness of the heart tones.

Another case which illustrates an anginal type of pain is:

Case 3: J. W., aged 50 years, had paroxysms of severe, substernal, oppressive-like pain which usually radiated to the left shoulder and down the left arm. After 6 months there was a sudden, dramatic death with blood gushing from his mouth. The necropsy revealed an aneurysm of the descending aorta which had ruptured into the left main bronchus.

Precordial pain is often present in the terminal stages of decompensated heart disease. Generally, the pain is mild unless due to coronary thrombosis. In the following case report of decompensated heart disease, the terminal precordial pain was due to a dissecting aneurysm of the aorta.

Case 4: O. S., a married woman, 24 years old, had recurring symptoms of decompensated syphilitic cardiac and renal disease (hypertension, edema and dyspnea). There was no pain until the day of death, when she complained bitterly of precordial pain and marked dyspnea. The necropsy revealed a dissecting aneurysm of the thoracic aorta which had ruptured into the mediastinal fatty tissues.

Case 5: This illustrates the type of pain caused by aneurysm which erodes the sternum and vertebrae. R. B., a woman, 27 years old, complained of constant, boring pain in the region of the upper sternum for several months. A swelling in the region of the manubrium sterni gradually developed. Death followed a severe hemorrhage through the skin, described as a spurting of blood from the neck.

Hemoptysis, which occurred 6 times, is emphasized for its infrequency. The greater number of ruptured aneurysms show no external evidences of bleeding. More general appreciation of this fact will lead to more frequent clinical recognition.

The dyspnea presented by the patients in this

group is of two types: breathlessness on exertion, associated with other symptoms of a failing heart, present for a long period of time before death; the severe dyspnea which probably develops at the time of rupture and continues until death. In one case, this was described as, "breathing was rapid and labored." In another case, "he gasped several times and died."

As shown in Table 3 only two patients had edema. The infrequency of symptoms of decompensation in patients who die with ruptured aneurysms might be explained on the basis of restricted activity which decompensated patients undergo. Thus the rise of intra-aortic pressure that is necessary to cause rupture is prevented.

A clinical diagnosis of aneurysm had been made in 7 cases, and the presence of rupture had been diagnosed in only three.

The mistaken diagnoses were: Lobar pneumonia; pyonephrosis of right kidney; uremic coma with nephritis; bowel tumor; hypertension with aortic regurgitation; cerebral thrombosis with broncho-pneumonia; neoplasm of lung; and angina pectoris.

Table 4 shows the site of perforation and the part into which bleeding occurred. The ascending aorta ruptured in 8: five times into the pericardial sac and three times through the sternum. In two instances, the aneurysm ruptured externally through the skin.

Summary: Autopsies of 100 cases of cardiovascular syphilis revealed ruptured aneurysm as the cause of death in 15%.

The greatest incidence of rupture occurred in the decades 30 to 40 and 20 to 30.

Pain and dyspnea were the outstanding symptoms prior to and after the rupture; external bleeding was present eight times.

Mistaken clinical diagnoses were frequent.

Rupture of the ascending aorta into the pericardium is the most common form.

## Society Proceedings

### ADAMS COUNTY

The regular monthly meeting of the Adams County Medical Society was held in the W. C. U. Building, Nov. 11, 1929. The meeting was called to order by the President, at 8:20 P. M., with 34 members and three visitors in attendance.

Dr. A. H. Bitter gave an interesting report of the 1929 meeting of the American College of Surgeons, held in Chicago, and Dr. Miller gave an equally interesting report of the 1929 meeting of the Interstate

Post graduate Medical Association of North America, held in Detroit.

This was followed by a scientific program conducted by the Peoria City Medical Society. Dr. Wilbur L. Bowen of Peoria, read a paper entitled, "Surgery of the Thyroid," which was discussed by Drs. Koch, Ross and Stevenson, and finally closed by Dr. Bowen. Dr. Perry B. Goodwin of Peoria, gave an interesting paper on "Diverticula of the Esophagus," illustrated with lantern slides. This paper was discussed by Drs. Stevenson, Shulian, Miller and Swanberg, and finally closed by Dr. Goodwin.

The Secretary made a motion that the Society extend a rising vote of thanks to the essayists for coming to Quincy to address us. This was unanimously carried.

Dr. C. D. Center, chairman of the committee that has been appointed to draft a new Fee Bill, read the report of the committee. This report consisted of a new Fee Bill which was ordered printed and sent to all of the members by mail in order that they may have an opportunity to thoroughly consider it by the time of the December meeting.

Drs. C. O. Molz, H. H. Fletcher, and I. H. Wineberg were elected to membership in the Society.

The meeting adjourned about 10:45 P. M.

HAROLD SWANBERG, M. D.,  
Secretary,

### COOK COUNTY

#### CHICAGO MEDICAL SOCIETY

*Regular Meeting, Nov. 13, 1929*

The Prevention of Contagious Diseases—Archibald L. Hoyne, Superintendent, Municipal Hospital for Contagious Diseases, City of Chicago.

Comment: Arnold H. Kegel, Commissioner of Health of the City of Chicago.

*Regular Meeting, November 20, 1929*

The Clinical Physiology of Aortic Insufficiency—Carl J. Wiggers, School of Medicine, Western Reserve University, Cleveland Ohio.

Discussion: James G. Carr, Professor A. J. Carlson, University of Chicago.

*Joint Meeting of the Illinois Division of the Society for Experimental Biology and Medicine and the Chicago Medical Society, Nov. 27, 1929*

1. The Clinical Use of Ephedrin Sulphate in the Treatment of Acute Shock from Trauma, or Hemorrhage, Carl A. Johnson.

2. Acute Dilatation of the Stomach, L. R. Dragstedt and James C. Ellis.

3. Effect of Therapeutic Venous Ligation on Blood Flow in Cases of Arterial Occlusion, M. L. Montgomery, (Introduced by Dr. Dragstedt).

4. Embryo-Arsenic Tumors in Rats, F. A. Munkin and M. F. Ckrit.

5. Clinical Significance of Indicaemia, P. Shapiro and B. L. Monias, (Introduced by Dr. R. H. Jaffe).

6. Experimental Jejunal Ulcer, G. B. Fauley and A. C. Ivy.

7. On the Non-Existence of a Hormone for Saliv-

ary Secretion, J. Sacks and M. S. Kim, (Introduced by Dr. A. C. Ivy).

8. Attempts to Visualize the Gallbladder of the Rabbit with tetraiodophenolphthalein, H. C. Lueth and A. C. Ivy.

9. The Non-Ubiquitous Occurrence of Secretin, Glenn E. Dreyer and A. C. Ivy.

10. Intravenous Administration of Irradiated Ergosterol, C. I. Reed.

11. The Action of Specific Diuretics, George Curtis.

#### *By Title*

12. Reoccurrence of Cardio-Accelerator Fibers in the Vagus Nerve of Dogs, C. I. Reed.

13. The Effect of Certain Alkaloids on Early Cleavage in *Arbacia Punctulata*, M. A. Hinrichs and I. T. Genther.

14. Modification of Development in *Arbacia Punctulata* on the Basis of Differential Susceptibility to Certain Alkaloids, M. A. Hinrichs.

### HENDERSON COUNTY

The semi-annual meeting of the Henderson County Medical Society was held at Biggsville, Illinois, November 6, 1929, with about forty-five physicians of western Illinois and eastern Iowa present.

The first speaker on the program was Dr. John J. McShane of Springfield, chief of the Department of Epidemiology of the State Department of Health. Dr. McShane talked on "Principles of Epidemiology," which was a very practical talk and was greatly appreciated by all present. A general discussion of contagious diseases, the functions and efforts of the State Health Department in their control, methods of conveyance and some of the more recent developments in the etiology and management of these cases. An excellent resume of the work on Undulant Fever was also given by Dr. McShane and a history of the disease to the present time.

Dr. R. C. McMillan, for twenty years city Health Commissioner of Monmouth, led the discussion of this talk. Dr. McMillan told of the changes in contagious disease control that have occurred in the past twenty years and gave an interesting discussion of the paper. The talk of Dr. McShane was also discussed by a number of others and many questions were asked relative to various requirements of the State Health Department and their work in controlling disease.

Doctor Joseph Greengard, associate in Pediatrics, University of Illinois College of Medicine, Chicago gave a paper on "Prophylaxis in Infantile Diseases." This was a very practical and interesting talk on the prevention of diseases of infants, the essentials of infant feeding, the early addition of other foods in addition to milk, in many cases, pre-natal rickets and the prophylaxis of nutritional diseases in general.

Dr. Ralph Graham of Monmouth in discussion told of the necessity of proper pre-natal care, in prevention of many nutritional diseases of infants, told of his preference for boiled milk in infant feeding to questionable pasteurized milk, the dangers of feeding frozen milk



to infants and gave an excellent discussion of the paper.

Dr. Louis N. Tate of Galesburg also discussed the paper from the standpoint of one chiefly interested in the care of children. Several others present also discussed the paper.

After the Scientific Meeting was concluded the five members of the Henderson County Society acted as hosts to an excellent dinner, concluding the program.

Physicians were present from Burlington and Fort Madison, Iowa, Monmouth, Galesburg, Canton, Cuba, Prairie City, Avon, Little York, Stronghurst, Oquawka, Gladstone and Biggsville.

During the meeting the only practicing physician in Henderson County who was not a member joined the Society making Henderson County another 100% society, from the standpoint of membership. All physicians in attendance voted the Henderson County men excellent hosts and assured them that at the next meeting of the society, they would be present and bring others with them assuring them of twice the attendance that were present at this meeting.

ISAAC F. HARTER, Secretary.

## Marriages

THOMAS ADDISON BAIRD, Rockford, Ill., to Miss Edna Allred Records of San Antonio, Tex., in September.

MAURICE A. BERNSTEIN to Miss Edith Mason, both of Chicago, at Antioch, Ill., October 6.

JOHN CHARLES BERRY to Mrs. Ida W. West, both of Chicago, October 5.

WILLIAM STEWARD BEYER, Rockford, Ill., to Miss Mary Ella Ferguson, at Madison, Wis., October 23.

F. WILLARD BROWN, DWIGHT, Ill., to Miss Agnes Michaelson of Kankakee, October 31.

WARD A. DE YOUNG, Chicago, to Miss Abigail Robinson at Saugatuck, Mich., October 26.

WILLIAM T. FERRIS to Miss Thelma Mae Swales, both of Chicago, October 10.

JULIUS P. KISSEL to Miss Mary Nolden, both of Centralia, Ill., at St. Louis, October 16.

THOMAS F. KRAUSS to Mrs. Ethel Wilcox Hardy, both of Rockford, Ill., October 26.

LAWRENCE E. PIERSON, Chicago, to Miss Alma Gladys Hill at Stanhope, Iowa, October 22.

THOMAS E. ROBERTS, Oak Park, Ill., to Miss Mabel M. Osgood, October 26.

ISAAC C. WALKER to Miss Lois Metsinger, both of Marion, Ill., in Chicago, August 14.

NELSON A. WRIGHT, JR., Pekin, Ill., to Miss

Melba R. Blank of Peoria, at Springfield, October 5.

## Personals

Dr. Oscar D. Mulliken has been elected president of the Elgin Physicians' Club for the ensuing year.

Dr. Solomon Strouse, associate clinical professor of medicine, Rush Medical College, addressed the Cincinnati College of Medicine, November 14, on "Obesity."

Dr. Clement L. Martin, Chicago, addressed the Bureau County Medical Society, November 14, on "Treatment of Hemorrhoids by Nonsurgical and Operative Methods."

Dr. Charles Mayo, Rochester, Minn., addressed the Winnebago County Medical Society, Rockford, November 5; Dr. Plinn F. Morse, Detroit, spoke on diseases of the gallbladder.

Dr. Argal E. Hubbard, for about ten years medical director of the Municipal Tuberculosis Sanatorium at Peoria, resigned, November 15, to engage in private practice.

Dr. Arnold H. Kegel, Health Commissioner of Chicago, was the guest of the council of the Chicago Medical Society at its November 12 meeting, at which he stated that he desired the council to know that he welcomes suggestions for the betterment of the public health of the community.

Dr. Italo F. Volini, professor and head of the department of medicine of Loyola University School of Medicine, has been awarded the rank of chevalier of the Crown of Italy for "service to the Italian people in the United States and for fostering Italian ideals and culture."

Dr. Charles A. Elliott, professor of medicine, Northwestern University Medical School and recently Vice President of the American Medical Association, has been appointed a member of the medical council of the U. S. Veterans' Bureau to succeed the late Dr. Frank B. Granger of Boston.

Dr. William C. Woodward, director, Bureau of Legal Medicine and Legislation, American Medical Association, addressed the South Chicago Branch of the Chicago Medical Society,

October 29, on "What the Physician Should Know About Malpractice," and Dr. Anton J. Carlson, professor of physiology, University of Chicago, "Relation of the Sympathetic Nervous System to Metabolism."

Dr. Charles B. Reed, president of the Chicago Medical Society, on December 22 will give the last of a series of lectures which are being given by the Chicago Academy of Science in Lincoln Park on Sunday afternoons at 3 p. m. Dr. Reed's subject will be "Is the Doctor Responsible for the High Cost of Illness?"

Dr. G. Carl Huber of the University of Michigan Medical School, Ann Arbor, delivered the first Stephen Walter Ranson Lecture at Northwestern University Medical School, November 14, on "The Regeneration of Peripheral Nerves."

Dr. Wendell C. Phillips, New York, Past President of the American Medical Association, addressed the Chicago Laryngological and Otolological Society, November 4, on "Application of Medical and Social Science to the Problems of Acquired Deafness."

The board of trustees of Northwestern University, by unanimous action, has combined the departments of obstetrics and gynecology, and has appointed Dr. Arthur H. Curtis as chairman and professor. Dr. Curtis graduated at Rush Medical College in 1905, was a Cook County Hospital intern, and did graduate work in Vienna and Berlin. He is a past president and secretary of the American Gynecological Society, and has recently published a book on gynecologic diagnosis. Dr. Curtis has practiced in Chicago since 1909 and has held the professorship of gynecology since the death of Dr. Thomas Watkins.

Dr. Rollin T. Woodyatt is reported to have been bequeathed about \$276,000 by the will of the late William Liston Brown, formerly of Chicago, who died, November 1, at Pasadena, Calif., aged 87. The will also provides that a portion of his \$2,000,000 estate, amounting, as estimated by an expert, to \$645,000, be given to the Presbyterian Hospital; \$275,000 to the Chicago Memorial Hospital; \$185,000 to the Evanston Hospital, and \$92,000 each to the County Home for Convalescent Children and the Home for Destitute Crippled Children.

Dr. Henry E. Wagner has returned from Europe and may be found at 25 East Washington street, Chicago.

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## News Notes

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—The cornerstone of the New Bethany Hospital, Trumbull Avenue and Van Buren Street, was laid Sunday, November 3.

—An epidemic of seventy cases of Vincent's angina, or so-called trench mouth, was reported at the Spaulding School for Crippled Children, October 30.

—The Chicago Orthopedic Club was addressed November 8, at the Medical and Dental Arts Club by Drs. Beveridge H. Moore on "Bone Lengthening Operation" and Fred W. Hark on "Bifurcation Operations."

—The Chicago Tuberculosis Society was addressed, November 14, by Dr. Philip H. Kreuscher on differential diagnosis, pathology and treatment of surgical tuberculosis, and by Dr. Theodore Cornbleet on "Medical Aspects of Cutaneous Tuberculosis."

—The Chicago Council of Medical Women will be addressed, December 6, at the Medical and Dental Arts Club by Drs. Irene T. Mead and Lena Sadler on colitis, and treatment of hemorrhoids, respectively.

—The Perry County Medical Society, Pinckneyville, held a symposium on pneumonia, October 29, the speakers being Drs. Leslie D. Cassidy, Oliver Abel, Jr., Carliss M. Stroud, John W. Thompson, Jr., and Frank R. Finnigan, all of St. Louis.

—The Chicago and Milwaukee roentgen-ray societies met jointly at the Virginia Hotel, November 14; Drs. Eben J. Carey, Milwaukee, spoke on "Physiology and Pathology of Bone Growth"; Fred J. Hodges, Madison, on "The Teaching Value of a Roentgen Film," and Frank W. MacKoy, Milwaukee, on "Gastro-Intestinal Diverticula and Associated Diseases."

—The Chicago Gynecological Society was addressed, November 15, by Dr. Géza de Takáts on "Treatment of Varicose Veins and Thrombophlebitis," and by Drs. Jacob Meyer, Julius E. Lackner and Sydney S. Schochet on "Paroxys-



mal Tachycardia in Pregnancy: Review of the Literature, with a Report of Two Cases."

—The Aesculapian Society of the Wabash Valley held its eighty-third annual meeting at Paris, October 31; Dr. Charles S. Laughlin, Vineland, N. J., spoke on "Our Idiosyncrasies of Conduct, the Basis and Continuing Cause of Unethical Practice"; Dr. Walter N. Thompson, Sullivan, Ind., on "The Physicians' Duty to the Community," and Dr. Charles H. Voorheis, Hutsonville, Ill., on "The Kidney of Pregnancy."

—The psychopathic laboratory, which for many years has been under the municipal court, has been placed under the direction of the Chicago Department of Health. The health commissioner expects to extend the services of the laboratory to the school child, whereas heretofore they have been confined to court cases. Dr. Meyer Solomon, who has been appointed director of the bureau of mental hygiene, will have general charge of the laboratory, and Dr. David B. Rotman, immediate charge.

—The state architect announced that contracts had been let for the construction of twenty-five fireproof buildings to supplement the state hospitals for the insane at Elgin, Lincoln and Dunning, which urgently need additional room. Ten of the new buildings will be at Elgin, ten at Lincoln, and five at Dunning. The architect, in designing the buildings, planned them to be a standard, so that the construction of similar buildings in the future would be as economical as possible for the state. The buildings will be E shaped with dining and recreation halls at the ends and sleeping quarters in between.

—The state health commissioner stated, November 13, that diphtheria was being reported in Illinois at the rate of about 200 cases a week and that the prevalence has more than doubled in the last two months. Illinois now has, he said, more diphtheria than any large state in the union. The number of cases reported now is 25 per cent above that for the corresponding period of 1928 and higher than for the previous year since 1923. Reports are coming from widely separated points in Illinois, indicating that exposure has been extensive and that the

development of cases at almost any place may be regarded without surprise. In view of the late arrival of fall, the commissioner believes that the prospects favor a greater increase.

—The tenth annual report to the governors of the Chicago Institute of Medicine on necropsies in hospitals included reports from fifty-two hospitals of Chicago. There was an increase in the number of autopsies, as previous reports showed. Permission necropsies made in Chicago in 1928 numbered 2,917, as against 2,094 in 1927 and 1,849 in 1926. The percentage of permission necropsies for 1928 for the hospitals reporting was 24.1. This is an important index, the committee says, of the general character of the professional work of the hospital; in a few of them standards of work continued at a low ebb. There were 2,271 cases of death referred to the coroner's office during 1928. The committee thanks the superintendents and staffs of the hospitals reporting for their cooperation.

—The Southern Illinois Medical Association, which held its fifty-fifth annual meeting at Benton, November 7-8, was addressed by Drs. Frederick O. Frederickson, Chicago, president of the Illinois State Medical Society, on "Control of Medical Practice"; Bennett Y. Alvis, St. Louis, on "Tuberculosis of the Eye"; Floyd Stewart, St. Louis, on "Pyelograms and Their Importance to the General Surgeon," and Marion L. Klinefelter, St. Louis, on "Early Diagnosis of Orthopedic Conditions." Dr. Lionel S. Luton, St. Louis, presented motion pictures illustrating the valves of the heart in action. Among other speakers were Dr. Robert F. Lischer, Mascoutah, who as vice president has been acting as president of the association on account of the poor health of Dr. Albert R. Carter of Murphysboro; Dr. James S. Templeton, Pinckneyville, councilor of the district, who spoke on obstetrics, and Dr. Andy Hall, state health commissioner, on "Maternal and Infant Mortality."

—At a recent meeting of the board of trustees of the University of Chicago, Dr. Joseph B. De Lee was appointed professor of obstetrics and gynecology and chairman of the department for three years from October 1. Dr. De Lee for many years has occupied a similar position at Northwestern University Medical School. The

Chicago Lying-In Hospital, of which he has been the medical director since its foundation, is now affiliated with the University of Chicago and a new building is being erected on the campus on the south side. Other appointments in this department at the University of Chicago include Dr. Fred L. Adair, Minneapolis, as professor of obstetrics and gynecology, and Dr. Eloise Parsons as assistant professor of gynecology. Dr. Howard J. Holloway has been appointed a clinical associate in obstetrics and gynecology at Rush Medical College. Dr. Rudolph W. Holmes has resigned as professor emeritus in the department of obstetrics and gynecology of Rush Medical College.

## Deaths

MILTON EBEN BLANCHARD, Marseilles, Ill.; Eclectic Medical College, Cincinnati, 1878; Rush Medical College, 1894; local surgeon for the C. R-I and P. Ry. Company and health officer of Marseilles; aged 77; died, November 1, of cerebral hemorrhage.

CHARLES EDGAR CESSNA, Oak Park, Ill.; Rush Medical College, Chicago, 1885; aged 66; died, September 6, at the West Suburban Hospital, of heart disease.

CORNELIUS L. CLANCY, Chicago; Rush Medical College, 1883; physician and druggist for many years; retired in 1921 after leasing his store for 99 years; aged 76; died, November 19, of chronic nephritis.

FLOYD MERRELLE DONDANVILLE, Dwight, Ill.; General Medical College, Chicago, 1911; aged 46; died, October 17, of hypostatic pneumonia.

PERCY WALKER GILL, Chicago; Illinois Medical College, Chicago, 1908; aged 48; died, October 21, at the Presbyterian Hospital, of chronic nephritis, uremia and bronchopneumonia.

IRVIN J. HECKMAN, Kingston, Ill.; University of Illinois College of Medicine, 1895; former practitioner in Rockford and for several years on medical staff of Elgin State Hospital; aged 68; died, October 28, in Hinsdale sanitarium, following a long sickness.

KATHERINE DEMPSEY HYDE, Chicago; Harvey Medical College, Chicago, 1902; formerly on the staff of the Woman's and Children's Hospital; aged 62; died, October 15, at the Henrotin Hospital, of bronchial asthma.

FRANK WILLIAM KLOCKE, Chicago; Washington University School of Medicine, St. Louis, 1908; member of the Illinois State Medical Society; aged 60; died, October 2, of streptococcus septicemia due to an infected tooth.

MELVILLE C. K. LITTLE, Northfield, Ill.; College of Medicine and Surgery, Chicago, 1905; founder and

president of the North Shore Military academy, at Niles Center; aged 46; died, November 3, at St. Clair hotel, Chicago, of chronic nephritis.

MARY VAN ALSTINE MAXSON, Oak Park, Ill.; Herzing Medical College, Chicago, 1898; a trustee of Francis Willard hospital for many years; aged 65; died, November 25, of cerebral hemorrhage.

JESSE A. ORR, Metropolis, Ill.; Eclectic Medical Institute, Cincinnati, 1878; Civil War veteran; aged 84; died, October 29, of hypostatic pneumonia.

ORA LEVANT PELTON, JR., Elgin, Ill.; Northwestern University Medical School, 1909; one of the founders of Pelton Clinic; aged 42; died, October 28, of splenomyelogenous leukemia.

JACOB W. ROOT, Kilbourne, Ill. (licensed, Illinois, 1878); member of the Illinois State Medical Society; Civil War veteran; aged 83; died, September 15, of heart disease.

WILLIAM H. ROSS, Jerseyville, Ill.; University of Louisville (Ky.) School of Medicine, 1868; aged 97; died, October 12, of pneumonia.

JAMES ARTHUR ROWLEY, Chicago; University of Michigan Medical School, Ann Arbor, 1926; aged 26; died, November 3, at Wausau, Wis., of endocarditis and renal infarction.

PETER G. RULIEN, Joliet, Ill.; Chicago Medical College, 1890; past president of the Will County Medical Society; formerly city health officer; aged 68; died, August 30, of uremia, chronic nephritis and diabetes mellitus.

WILLIAM SAMMIS, Chicago; Kentucky School of Medicine, Louisville, 1875; aged 76; died suddenly, October 9, in his office.

HORACE HORMELL SHEETS, Oregon, Ill.; Rush Medical College, Chicago, 1902; served during the World War; aged 51; died, October 25, in a hospital at Dixon, of cerebral hemorrhage.

JAMES L. TAYLOR, Springfield, Ill.; Rush Medical College, Chicago, 1877; member of the Illinois State Medical Society; aged 76; died, October 17, of chronic myocarditis.

WILLIAM SEYMOUR WHITE, Evanston, Ill.; Chicago Homeopathic Medical College, 1888; formerly president of Evanston branch, Chicago Medical Society; and surgeon in Illinois Militia; aged 64; died November 16, at North Shore Health resort, of cardio-vascular-renal disease.

SAMUEL S. WINNER, Chicago; Chicago College of Medicine and Surgery, 1909; for fifteen years connected with the state department of public health in Illinois; aged 44; died, September 22, of cerebral hemorrhage.

FRED WILLIAM ZANDERS, Troy, Ill.; St. Louis Medical College, 1875 Civil War veteran; aged 83; died, October 11, of senility.



# First

AND ALL BASED UPON THE MEAD POLICY

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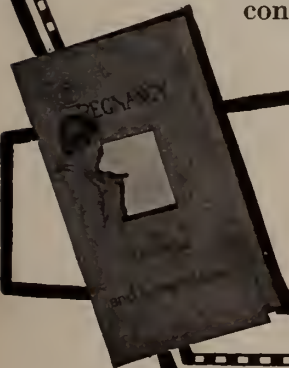
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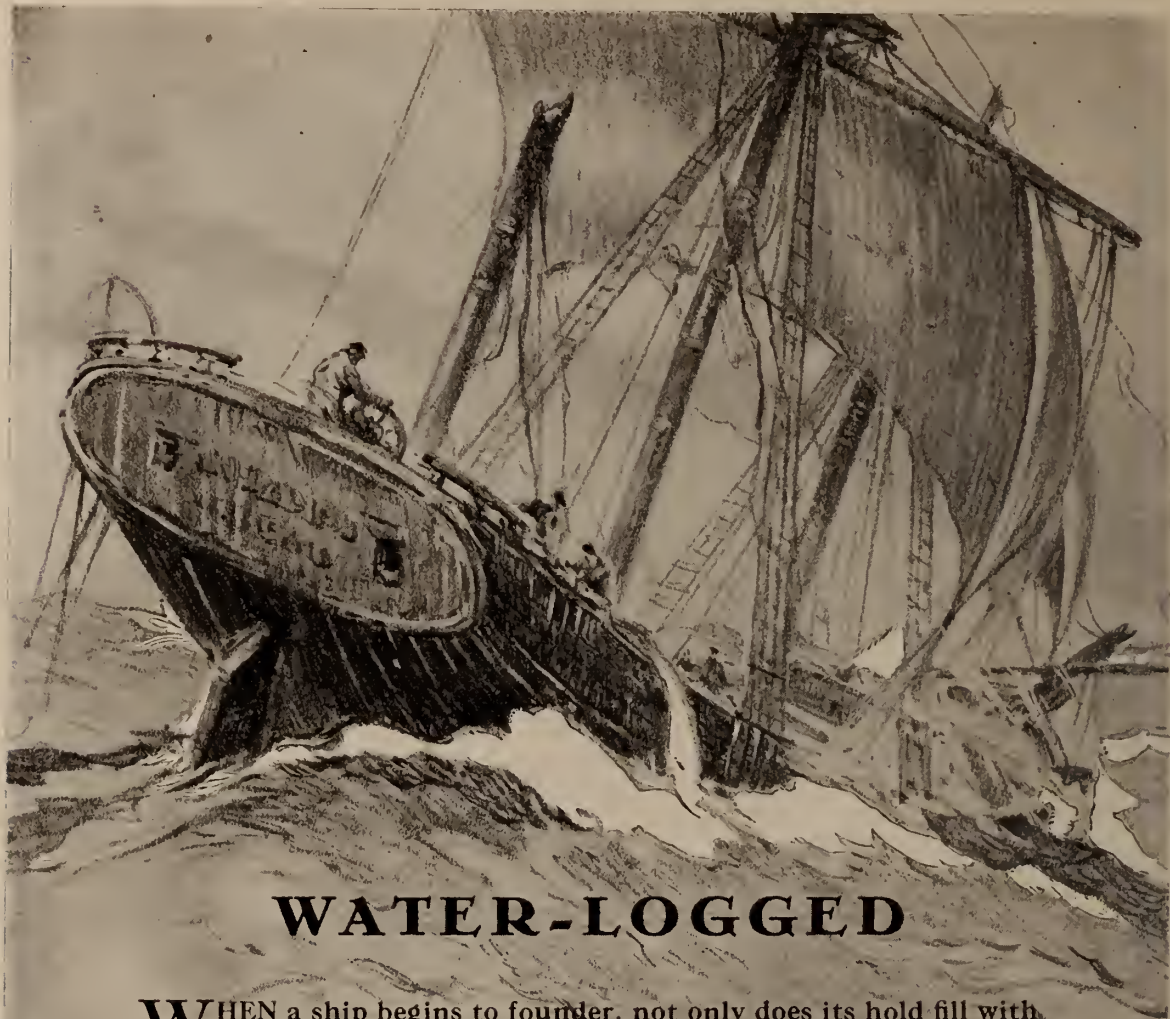
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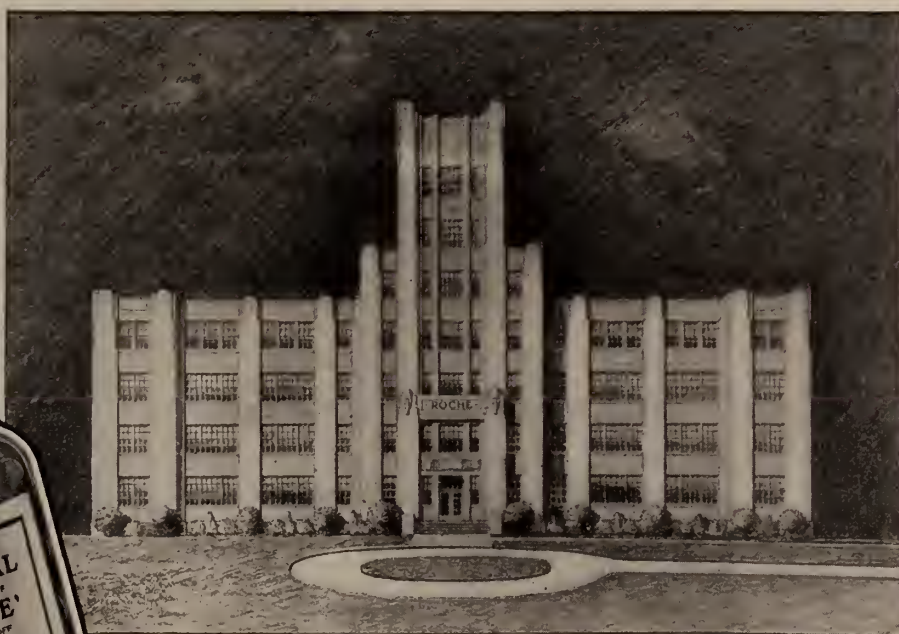
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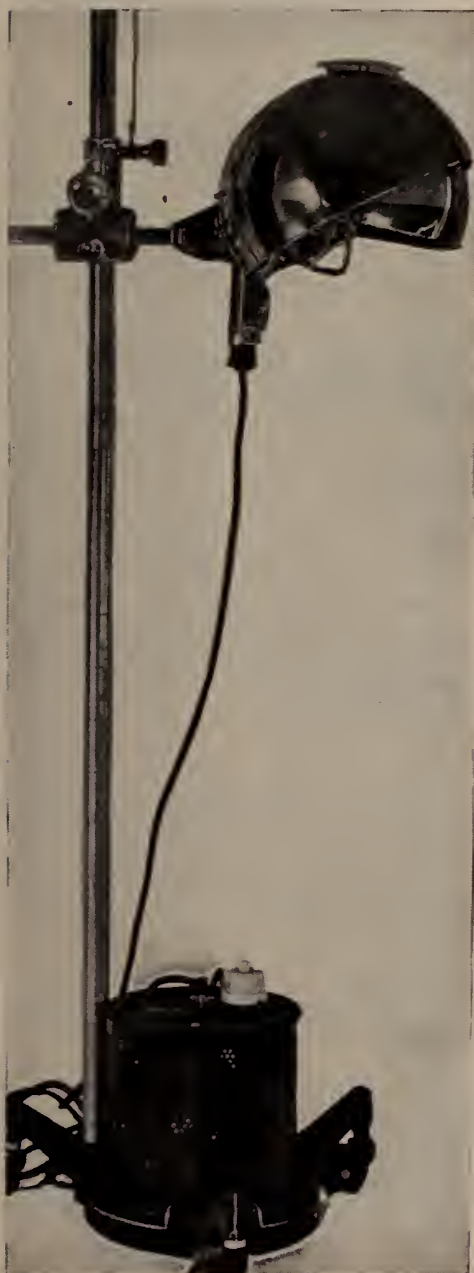
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This mixture contains proteins, carbohydrates and mineral salts in a form readily digestible and available for immediate assimilation.

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People suffering from diabetes really enjoy gelatine dishes—and they *can* enjoy them if they have our diabetic recipes prepared by one of the country's recognized dietitians. Remember, Knox Gelatine is free from *sugar*.

**KNOX** *is the*  
*real* **GELATINE**  
Contains No Sugar

## WINTER SALAD (Six Servings)

	Grams	Prot.	Fat	Carb.	Cal.
2 teaspoons Knox Sparkling Gelatine	4.5	4	....	....	....
1/2 cup cold water	....	....	....	....	....
1/2 cup hot water	....	....	....	....	....
1/2 teaspoon salt	....	....	....	....	....
1/2 cup vinegar	....	....	....	....	....
1 1/2 cups grated cheese	150	43	54	....	....
1/2 cup chopped stuffed olives	70	1	19	8	....
1/2 cup chopped celery	60	1	....	2	....
1/2 cup chopped green pepper	25	....	....	1	....
1/2 cup cream, whipped	75	2	30	2	....
Total	51	103	13	1183	
One serving	8.5	17	2	197	

Soak gelatine in cold water. Bring water and salt to boil and dissolve gelatine in it. Add vinegar and set aside to chill. When nearly set, beat until frothy, fold in cheese, olives, celery, pepper and whipped cream. Turn into molds and chill until firm. Unmold on lettuce leaf and serve.

## SPINACH SALAD (Six Servings)

	Grams	Prot.	Fat	Carb.	Cal.
1 1/2 tablespoons Knox Sparkling Gelatine	10	9	....	....	....
1/2 cup cold water	....	....	....	....	....
1 1/4 cups boiling water	....	....	....	....	....
2 tablespoons lemon juice	20	....	....	2	....
1/2 teaspoon salt	....	....	....	....	....
1 1/2 cups cooked spinach, chopped	300	6	....	7	....
2 hard cooked eggs	100	13	10.5	....	....
Total	28	10.5	9	242.5	
One serving	5	2	1.5	40	

Soak gelatine in cold water and dissolve in boiling water. Add lemon juice, salt, strain and chill. When nearly set, stir in chopped spinach, mold and chill until firm. Serve on lettuce hearts or tender chicory leaves and garnish with hard cooked egg, cut lengthwise in sixths and sprinkled with paprika. Serve with mayonnaise.

**If** you agree that recipes like the ones on this page will be helpful in your diabetic practice, write for our complete Diabetic Recipe Book—it contains dozens of valuable recommendations. We shall be glad to mail you as many copies as you desire. Knox Gelatine Laboratories, 405 Knox Ave., Johnstown, N. Y.

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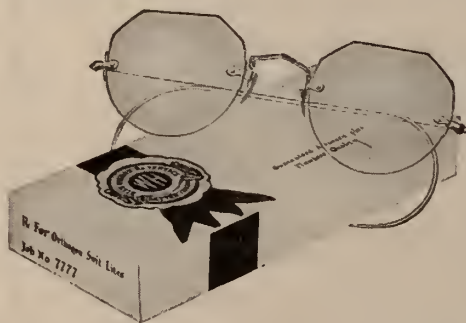
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The Lodge and Gymnasium are shown in the lower left; the ice-house and boat house are on the lake front. The new Sanatorium unit and the Hospital overlook the lake. The greenhouse, garage, and powerhouse are in the left center of the view. The Oconomowoc river flows through the property. Highway U. S. 16 is seen in the distance.

## NERVOUS DISORDERS

The Summit Hospital was organized in 1923 with the expressed purpose of maintaining in a general sanatorium a department for nervous disorders, where such cases could be treated for physical as well as mental anomalies. We are subscribed to the idea that many of the neuroses are precipitated by physical defects which are correctable by accepted methods of Medicine and Surgery. It is gratifying to us, therefore, to see the tremendous increase of reports in our periodicals substantiating such procedures.

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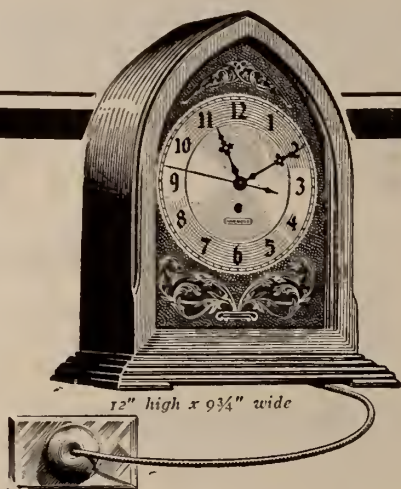


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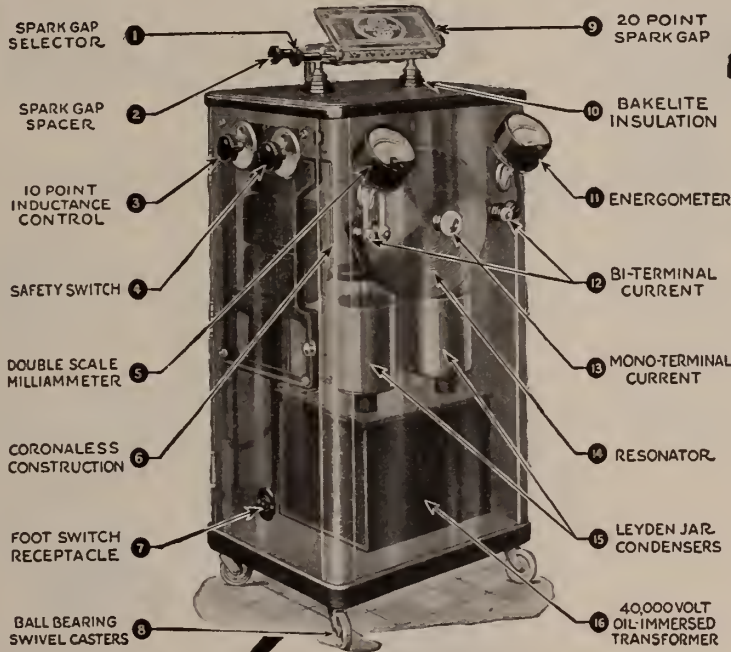
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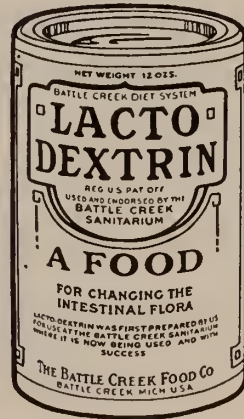
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De Witt	Chas. S. Bogardus, Clinton	Wm. R. Marshall, Clinton.
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Ford	J. S. Cunningham, Gibson City	H. W. Trigger, Loda.
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Greene	Howard Burns, Carrollton	A. R. Jarman, White Hall.
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(Continued on page 48)



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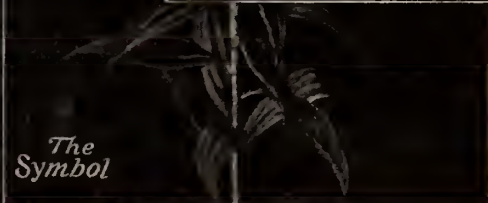




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## Book Notes

### THE NOSE, THROAT AND EAR AND THEIR DISEASES:

In original contributions by American and European authors. Edited by Chevalier Jackson, M. D., Professor of Bronchoscopy and Esophagoscopy in the University of Pennsylvania, in the Jefferson Medical College, and in the Graduate School, University of Pennsylvania, and George M. Coates, M. D., Professor of Otology, Graduate School, University of Pennsylvania. Assisted by Chevalier L. Jackson, M. D., Assistant in Bronchoscopy and Esophagoscopy, University of Pennsylvania. Octavo volume of 1177 pages with 657 illustrations and 27 inserts in colors. Philadelphia and London: W. B. Saunders Company, 1929. Cloth, \$13.00 net.

In this work historical data has been eliminated. The developmental stages of Nose, Throat and Ear Diseases seems out of step with the authors' idea of a practical work of this kind. What to do and how to do it has been considered the kind of information for which readers will consult this book. The work is a practical one from cover to cover; it is the last word in Nose, Throat and Ear Diseases.

MODERN BIOLOGY. By J. T. Cunningham. New York. E. P. Dutton & Co.. 1929. Price \$3.00.

This work is a review of a principal phenomena of animal life in relation to modern concepts and theories.

INTERNATIONAL CLINICS. A quarterly of illustrated clinical lectures and especially prepared original articles by leading members of the medical profession throughout the world. Vol. II, Thirty-ninth Series. 1929. Philadelphia and London. J. B. Lippincott Company, 1929.

THE MEDICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 12, No. 6. (Mayo Clinic Number.) Octavo of 211 pages with 41 illustrations, and complete index and table of contents to volume 12. Per Clinic year, July, 1928, to May, 1929. Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, March, 1929.

The contributors to this number are Doctors Allen, Alvarez, Amberg, Bannick, Barborka, Bargaen, Barns, George Brown, Phil Brown, Constam, Dunlap, Eusterman, Giffin, Habein, Horton, Keith, Kennedy, McVicar, Morench, Moore, O'Leary, Parker, Snell, Vinson, Weir, Willins, Yater.

THE NEUROSES. By Israel S. Wechsler, M. D., Associate Professor of Clinical Neurology, Columbia University, New York City. Octavo of 330 pages. Philadelphia and London: W. B. Saunders Company, 1929. Cloth \$4.00 net.

The views expressed in this work are based on clinical experience of the author derived from active

contact with patients, supplements by the study of normal and abnormal psychology. The book is intended for medical students and practitioners.

THE PHYSIOLOGY OF LOVE. By George N. Katsainos, M. D., Boston. Privately printed. 1929. Price \$4.00.

PRINCIPLES AND PRACTICE OF ELECTROCARDIOGRAPHY. By Carl J. Wiggers, M.D. With 61 illustrations. St. Louis. The C. V. Mosby Company. 1929. Price \$7.50.

This work is very comprehensive, it is divided into three sections. The first deals with the general principles and procedures. The second explains the cause of the normal electrocardiographic deflections and their relation to physical and physiologic processes in the heart. The third section considers abnormal electrocardiograms. It points out the evidence of abnormalities and discusses their significance.

OSTEOMYELITIS AND COMPOUND FRACTURES AND OTHER INFECTED WOUNDS. TREATMENT BY THE METHOD OF DRAINAGE AND REST. By H. Winnett Orr, M.D. Illustrated. St. Louis. The C. V. Mosby Company. 1929. Price \$5.00.

In this work the author lays the foundation for, and describes the author's method for the treatment of infected wounds, especially of bones and joints.

CLINICAL LABORATORY METHODS. By Russell Landram Hayden, M.D. With 69 illustrations and 4 colored plates. Third edition. St. Louis. The C. V. Mosby Company. 1929. Price \$5.00.

This work is a simple yet complete outline for the average clinical laboratory workers, only methods are described that have proved both practical and dependable. The work has been brought up-to-date.

THE SURGICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 9, number 3. (New York number, June, 1929.) 299 pages with 125 illustrations. Per Clinic year (February, 1929, to December, 1929.) Paper, \$12.00; Cloth, \$16.00. Philadelphia and London.

The contributors to this number are Doctors Fred H. Albee, R. W. Bolling, Charles H. Chetwood, Wm. B. Coley, Ralph Colp, Guilford S. Dudley, Carl Eggers, Charles E. Farr, Charles Murray Gratz, Charles Gordon Heyd, Louis Rene Kaufman, Richard Lewisohn, Howard Lilienthal, Walton Martin, Herbert Willy Meyer, Edmonde D. Neer, Otto Carl Pickhardt, Maximilian A. Ramirez and Frank C. Yeomans.

A MANUAL OF DISEASES OF THE NOSE, THROAT AND EAR. By E. B. Gleason, M. D., LL.D., Professor of Otology, Graduate School of the University of Pennsylvania. Sixth Edition, Thoroughly Revised. 12 mo. of 617 pages with 262 illustrations. Philadelphia. (Continued on page 43)



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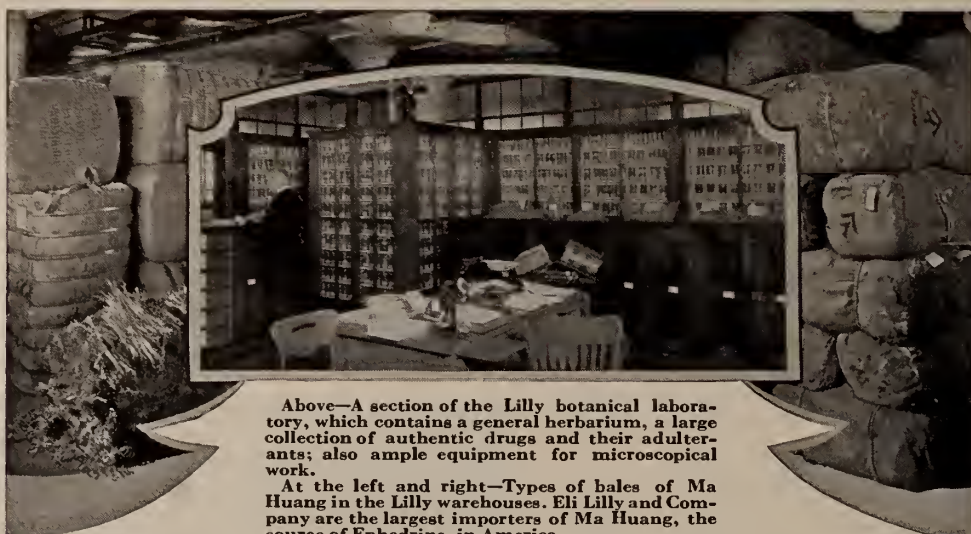
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## Book Notes

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Philadelphia and London: W. B. Saunders Company, 1929. Cloth, \$4.50 net.

This work is intended to supply students and general practitioners with the essential facts of rhinology, laryngology and otology in as concise a form as possible.

EPIDEMIOLOGY OLD AND NEW. By Sir William Hamer. New York. The Macmillan Company. Price, \$3.50.

This book represents an attempt to make comparison between the behaviour of epidemics, as seen in and from London during the last forty years and the corresponding happenings in Sydenham's time.

GETTING READY TO BE A MOTHER. By Carolyn Conant Van Blarcon, R. N., with an Introduction by J. Clifton Edgar, M. D. Second edition, revised, with eighty-two illustrations. New York. The Macmillan Company. 1929. Price, \$1.75.

ANATOMY AND THE PROBLEM OF BEHAVIOUR. By G. E. Coghill. New York. The Macmillan Company. 1929.

ANGINA PECTORIS. By Harlow Brooks, M. D. New York & London. Harper Brothers, Publishers. 1929. Price, \$2.50.

This volume attempts to present the practical phase of angina pectoris in a sufficiently clear manner to be understood by all, and particularly it stresses the subject of treatment.

DIABETES AND ITS TREATMENT. By Frederick M. Allen, M. D. New York & London. Funk & Wagnalls Company. 1928.

CARE OF THE MOUTH AND TEETH. By Harvey J. Burkhardt, D. D. S. New York & London. Funk & Wagnalls Company. 1928.

WHAT EVERYONE SHOULD KNOW ABOUT EYES. By F. Park Lewis, M. D. New York & London. Funk & Wagnalls Company. 1928.

The three books by Funk & Wagnalls Company are the latest volumes of the National Health Series.

The three topics covered by these volumes have long needed non-technical and authoritative explanations prepared especially for the benefit of the general public. Misinformation and hearsay and half-knowledge have been too prevalent among the very people who should have correct information. These three new volumes ideally meet the situation. The fact that the volumes are sold for only 30c each, though they contain sufficient material to fill much larger volumes which would necessarily be higher priced, is a great aid in securing a deservedly wide distribution for them.

PHYSICAL THERAPEUTIC TECHNIC. By Frank Butler Granger, M. D. Late Physician-in-Chief, Department of Physical Therapeutics, Boston City Hospi-

tal; Director of Physiotherapy, United States Army; Medical Counselor, United States Veterans Bureau; Member of Council on Physical Therapy, American Medical Association; Instructor of Physical Therapeutics, Harvard Medical School; Assistant Professor of Physical Therapy, Tufts Medical School. With a foreword by William D. McFee, M. D., Boston, Mass. Octavo volume of 417 pages with 135 illustrations. Philadelphia and London: W. B. Saunders Company. 1929. Cloth, \$6.50 net.

This book is written for the specialist in physical therapy. It is also intended for the physician, for the physician who has installed a limited equipment of physical therapy equipment.

DIAGNOSTIC METHODS AND INTERPRETATIONS OF INTERNAL MEDICINE. By Samuel A. Lowenberg, M. D., with 547 illustrations, some in colors. Philadelphia. F. A. Davis Company. 1929. Price \$10.00 net.

This book covers the field of diagnostics in internal medicine. It gives instructions on the various methods of examining the patient, descriptions of normal findings, enumerations of pathologic conditions with the normal and pathologic physical signs and, whenever possible, the reasons for such signs.

THE NEW PSYCHOLOGY OF THE UNCONSCIOUS. By C. W. Valentine. New York. The Macmillan Company. Price, \$1.60.

THE TREATMENT OF VARICOSE VEINS BY INTRAVENOUS INJECTIONS. By J. D. P. McLatchie, M. D. New York. The Macmillan Company. 1929. Price, \$1.60.

In this work the author has endeavored to record not only the experience of some of the numerous workers in this portion of the therapeutic field, but also the result that he has obtained in his own hospital and private practice.

THE TONSILS AND ADENOIDS AND THEIR DISEASES. By Irwin Moore, M. B. C. M. St. Louis. The C. V. Mosby Company. 1928. Price, \$6.50.

In this work the author shows the part tonsils and adenoids play in cystenic diseases. The author sets out much of the regional anatomy as is needed to show the pathology and surgery of the tonsils and adenoids; the author has collected the observations and opinions of the leading throat specialists of the world and has presented them side by side with his own.

DISEASES AND DEFORMITIES OF THE SPINE AND THORAX. By Arthur Steindler, M. D. With 76 plates. St. Louis. The C. V. Mosby Company. 1929. Price, \$12.50.

In this work the author attempts to develop orthopedic judgment and contends that the development of independent judgment is even more essential in orthopedic questions than in other lines of surgery.

(Continued on page 47)

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No amount of statistical evidence, distorted in an effort to mislead the public, can disprove government figures showing the gain of Lucky Strike to be greater than the combined increase of all other cigarettes. The public will be served and this is proof, indeed, that regardless of price, you actually get more in Lucky Strike than any other cigarette can offer. Its perfect blend of fine tobaccos gives pure smoking delight. Its exclusive, secret toasting process guarantees the tobaccos free from irritants and impurities and, in the opinion of 20,679\* physicians, makes Lucky Strike less irritating than other cigarettes.

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The American Tobacco Company, Incorporated

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## Book Notes

(Continued from page 43)

**DISEASES OF THE THYROID GLAND.** By Arthur E. Hertzler, M. D. With a chapter on Hospital Management of Goiter Patients. By Victor E. Chesky, M. D. Second edition entirely rewritten. St. Louis. The C. V. Mosby Company. 1929. Price, \$7.50.

This edition presents the results of the continuation of the studies contained in the previous one. The conclusions presented have been arrived at only after a constant comparison of clinical pictures, the pathology, and a repeated examination of the patient in after years.

**PROGRESSIVE RELAXATION.** By Edmund Jacobson, M. D. Chicago. The University of Chicago Press. 1929. Price, \$5.00.

This work presents a physiological and clinical investigation of muscular states and their significance in psychology and medical practice. It is a study of neuro-muscular attentions, their role in disease and in every day life, with a new method for the analysis and treatment of various functional nervous disorders as well as for certain state of fatigue in persons who are not neurotic, but whose energy output might properly be economized in the interests of their general state of health.

**A NEW TREATMENT OF CANCER AND CHRONIC DISEASES.** By La Forest Potter, M. D. Boston. Richard G. Badger, Publisher. 1929. Price, \$2.00.

This volume is the product of twenty years study. In part one the death traps of the human body are discussed. In part two is the story of the secret of natural foods and the ductless gland secretions in relation to health and diseases. In part three the author deals with the psycho-physical treatment of cancer and chronic diseases and the discovery of the sixth sense.

**YOUTHFUL OLD AGE. HOW TO KEEP YOUNG.** By Walter M. Gallighan. New York. The Macmillan Company. 1929. Price \$2.50.

To those who chafe under the "fads" and "isms" propounded by health cranks, this book will come as a welcome relief. Life as the author sets it forth is a sweet "portion of labor and laughter and love."

**SURGICAL PATHOLOGY.** By William Boyd, M. D., Professor of Pathology, University of Manitoba, Winnipeg, Canada. Second Edition, Revised and Reset. Octavo of 933 pages, with 474 illustrations and 15 colored plates. Philadelphia and London: W. B. Saunders Company, March, 1929. Cloth, \$11.00 net.

In this edition certain sections have been entirely rewritten others have been recast, and to practically every chapter additions have been made. New illustrations to the number of 130 have been added. Twenty of the older illustrations have been replaced by newer ones.

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(Continued from page 28)

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Or an expert who cures chickens of the pip;

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Everybody is a "doctor,"

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From the frowning dietitian

To the snappy electrician

Who shocks you loose from all the body's woes.

So there's very little meaning

For a sufferer to be gleaning

When a man attaches "doctor" to his name.

He may pound you, he may starve you;

He may cut your hair or carve you;

You may have to call him doctor all the same.

—Stoddard King, in *Salt Lake Tribune*.

## NOTHING LEFT

Alice—"I hear Jack has broken off his engagement with Gladys. How did she take it?"

Virginia—"Oh, it completely unmanned her."—*American Legion Weekly*.

## ADVICE TO MY DAUGHTER

(By Rosemary Carr Benét)

Is it not odd that you should mock a voice

Which you have seldom heard; or nightly range

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High courage and cut fingers interest you

As they did her. They do not interest me.

Such likeness might well creep out anew

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But not, my child, the gaze as of the just

Unjustly blamed. That still Scotch look that ranked

My youthful sins. Choose something else instead.

Inherit other virtues if you must,

But do not leave me feeling that I've spanked

Your grandmother and sent her up to bed.

(Mrs. Benét is the daughter of our Dr. Rachel Hickey Carr.)

## A POLITE RETORT

The daughter of a certain strict-principled old deacon had attended a dance the previous night, much against her father's wishes. When she appeared for breakfast the next morning, he greeted her with the words.

"Good morning, daughter of Satan."

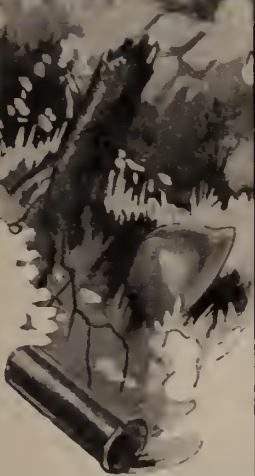
To which the maiden respectfully replied, "Good morning father."—Cornell Widow.

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[ Heavy ]

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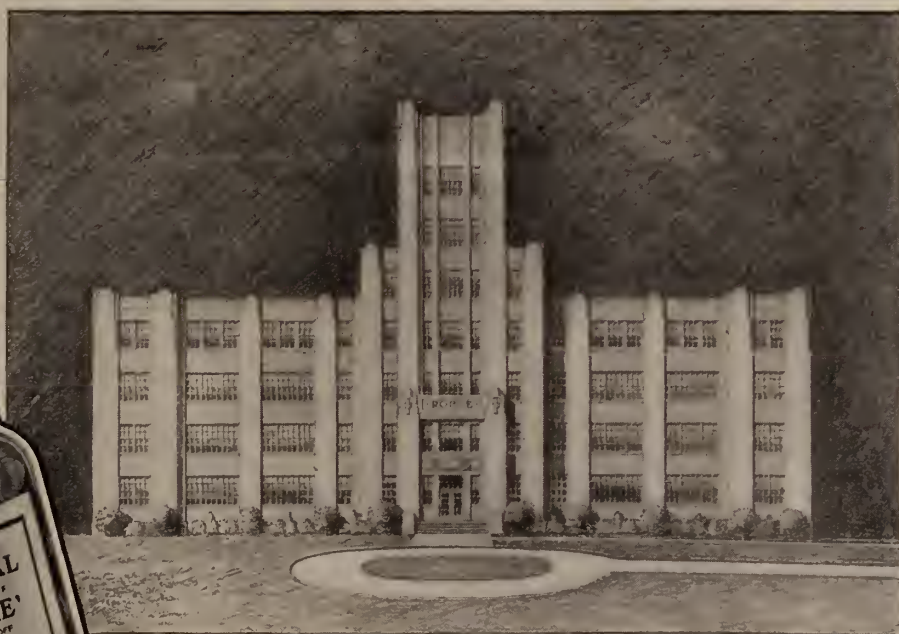
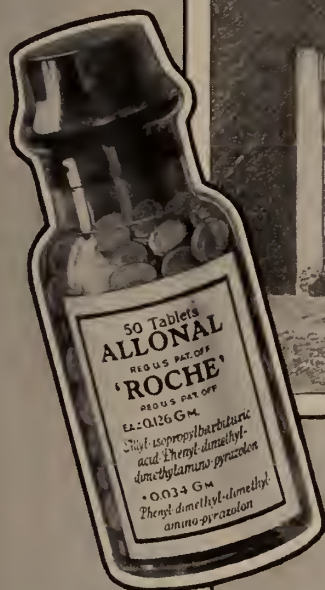


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(Continued on page 44)



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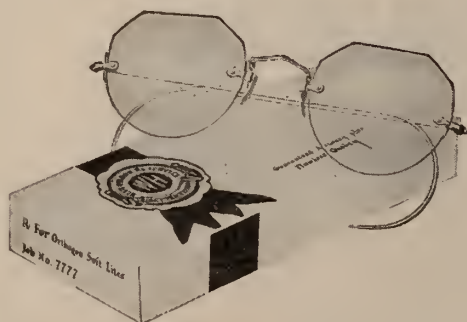
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## Book Reviews

**THE MEDICAL CLINICS OF NORTH AMERICA.** (Issued serially, one number every other month.) Volume 13, No. 1. (Boston Number, July, 1929.) Octavo of 280 pages with 36 illustrations. Per clinic year, July, 1929, to May, 1930. Paper, \$12.00; cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, March, 1929.

The contributors to this number are Doctors Baron, Blumgart, Curtis, Finland, Hill, Irving, Jackson, Joslin, Lawrence, Levine, Linenthal, Locke, Lord, MacMahon, Minot, Morse, Nissen, Ohler, Palmer, Reynolds, Robey, Root, Sprague, Ullian, Weiss, White.

**THE HISTORY OF HEMOSTASIS.** By Samuel Clark Harvey, M. D. With 19 illustrations. New York. Paul B. Hoeber. 1929. Price \$1.50.

This work is a biography of the control of hemorrhage following the varying fortunes of surgery.

**AN INTRODUCTION TO THE STUDY OF PHYSIC.** By William Heberden. Six illustrations. New York. Paul B. Hoeber, Inc., 1929. Price, \$2.00 net.

**CLINICAL ASPECTS OF PRESSURE VENOUS PRESSURE.** By J. A. E. Eyster, M. D. New York. The Macmillan Company. 1929. Price, \$2.50.

In the past important advances have been made in the knowledge and application of anterior blood pressure. The significance of Venous pressure, on the other hand, has in comparison been greatly neglected. This latter phase is very important and this work treats the subject in an up-to-date manner.

**PHYSICAL EXAMINATION AND DIAGNOSTIC ANATOMY.** By Charles B. Slade, M. D., formerly Chief of Clinic in General Medicine, University and Bellevue Hospital Medical School, New York. Fourth Edition, thoroughly revised. 12mo of 196 pages with 43 illustrations. Philadelphia and London: W. B. Saunders Company. 1929. Cloth, \$2.00 net.

This book is intended as a text book on physical examination, its technic, fundamental methods and principles, to prepare the students for the study of any of the various able and comprehensive works already written on physical diagnosis.

**THE COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION FOR 1928.** Volume XX. Edited by Mrs. M. H. Mellish, Richard M. Hewitt, M. D., and Mildred A. Felker, B. S. Octavo volume of 1197 pages with 288 illustrations. Philadelphia and London: W. B. Saunders Company, 1929. Cloth, \$13.00 Net.

This work makes available in one volume all the papers, or references to them which have been produced during the year by members of the staffs of the Mayo Clinic and the Mayo Foundation. The work should prove highly practical to the general practitioner, diagnostician and general surgeon.

**AMERICAN ILLUSTRATED MEDICAL DICTIONARY.** A complete Dictionary of the terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Medicine, Biology, Medical Biography, etc. By W. A. Newman Dorland, M. D., Member of the Committee on Nomenclature and Classification of Diseases of the American Medical Association. Fifteenth Edition, Revised and Enlarged. Octavo of 1,427 pages, 525 illustrations, 107 of them in colors, Philadelphia and London: W. B. Saunders Company, 1929. Flexible binding, plain \$7.00 net; thumb index, \$7.50 net.

This edition has received the most thorough revision of its long career. Several thousands of the newest terms have been added, careful revision has been given to the wording of every definition of the book.

The most important feature of this edition is the establishment of a definite standard in terminology, spelling, hyphenization. The entire book has been re-edited.

**GYNECOLOGY.** By Lynn Lily Fulkerson, M. D. With six hundred twelve illustrations, three in color. Philadelphia. P. Blakiston's Son & Co. 1929.

In this work the author presents in a simple, clear, concise, yet comprehensive manner, the essentials of medical and surgical gynecology, as it is taught and practiced by the active leaders in its special field, but with a trend in operative technique, towards the practice of leading general surgeons of the time saving use of the knife instead of the scissors, and the continuous suture rather than the interrupted suture wherever an equally satisfactory or better result can be obtained.

**THE TREATMENT OF FRACTURES.** By Lorenz Bohler, M. D. Authorized English translation. By M. E. Steinberg, M. D. With 234 illustrations. Vienna. Wilhelm Maudrich. 1929. Price, cloth, \$5.00.

This book is a record of the author's vast and intensive experience. At this time, when so much interest is displayed to advance the treatment of fractures and to find more uniform and better methods, this book should meet with favorable reception.

**THE SURGICAL CLINICS OF NORTH AMERICA.** (Issued serially, one number every other month.) Volume 9, No. 1. (Mayo Clinic Number—February, 1929.) 247 pages with 141 illustrations. Per Clinic year (February, 1929 to December, 1929), Paper, \$12.00; Cloth, \$16.00. Philadelphia and London.

Contributors to this number are Doctors Balfour, Bollman, Buie, Bumpus, Jr., Caylor, Chumley, Craig, Dixon, Figi, Hager, Harrington, Henderson, Higgins, Hunt, Judd, Lundy, Mann, Meyerding, Rankin, New, Passalacqua, Pemberton, Sager, Sistrunk, Smith, Walters.

**ASPECTS OF AGE LIFE AND DISEASE.** By Sir Humphrey Rowleston. New York. The Macmillan Company. 1929. Price, \$4.00.

(Continued on Page 41)



# THE SUMMIT HOSPITAL

G. R. LOVE, M. S., M. D., Physician in Charge  
OCONOMOWOC, WIS.



BIRDSEYE VIEW OF THE SUMMIT HOSPITAL PROPERTY

The Lodge and Gymnasium are shown in the lower left; the ice-house and boat house are on the lake front. The new Sanatorium unit and the Hospital overlook the lake. The greenhouse, garage, and powerhouse are in the left center of the view. The Oconomowoc river flows through the property. Highway U. S. 16 is seen in the distance.

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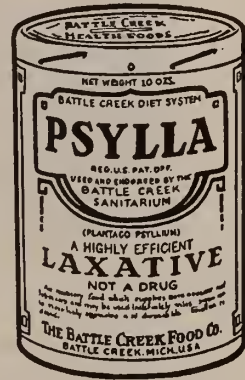
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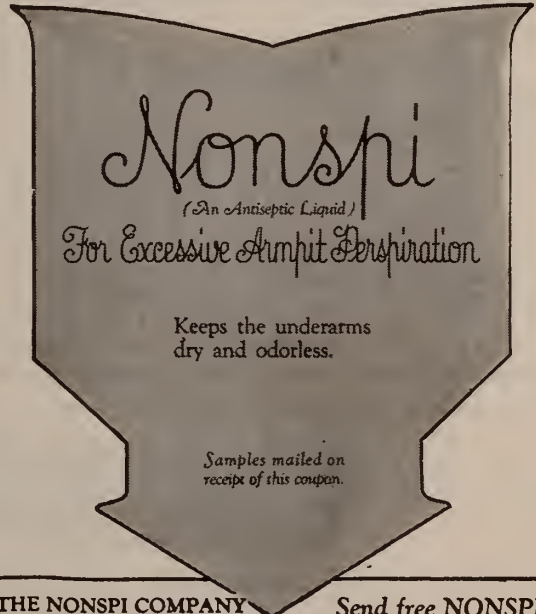


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This demonstration is accomplished by the injection of various and varying quantities of the FIRST MORNING URINE into immature Female Mice, in which the "ANTPITUITRIN" causes a "MATURATION OF THE OVARIES" with the production of their "specific hormone" (Follikulin) which, in turn, causes a maturation of the UTERUS and VAGINA. These changes can be seen MACROSCOPICALLY, in a Post Mortem made on the Mice on the FIFTH DAY after the first injection.

As we are limited to mice of Female Sex, of certain AGE and certain WEIGHT, necessitating the breeding of many such animals, the test is somewhat expensive to run. HOWEVER, the CERTAINTY OF THE RESULTS—practically 100%—the EARLY DIAGNOSIS possible,—irrespective of the Location of the Pregnancy, irrespective of the presence of "complicating" Pelvic Pathology, makes it an EXCELLENT INVESTMENT!

While, originally, we had set a definite price for this test, we are going to try an EXPERIMENT in "MEDICAL ECONOMICS"—so as to bring the procedure WITHIN THE REACH OF ALL—by adopting a "SLIDING SCALE" of prices—varying the charge with the financial ability of the patient to pay—for the judgment of which we ask the cooperation of the Attending Physician. TELEPHONE FOR PRICES.

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Telephone State 6877

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Capacity 100 Beds

Patients received in all stages of Pulmonary Consumption.

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Open Porch and Two Bed Rooms; with Board \$21.50 per week.

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Lung Collapse in proper cases. Heliotherapy.

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Founded by Dr. Oscar H. King, 1883

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Telephone Lake Geneva 61

**For Nervous and Mental Disorders**

Selected Alcoholic and Drug Addicts

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Full time resident physician in charge

Joseph D. Warrick, Medical Director

Chicago Office—1656 N. La Salle St.

Telephone Lincoln 0501

## Book Reviews

(Continued from Page 22)

**THE CONQUEST OF CANCER BY RADIUM AND OTHER METHODS.** By Daniel Thomas Quigley, M. D. Illustrated with 334 engravings. Philadelphia. F. A. Davis Company. 1929. Price, \$6.00.

This work gives the history of cancer from the ancient to the present time. It tells of the causation prophylaxis and treatment of cancer. It gives a summary of what we know concerning cancer and diseased conditions (in addition to cancer) in which radium is of value.

**THE HISTORY OF NURSING.** By James J. Walsh, M. D. New York. B. J. Kennedy & Sons. 1929. Price, postpaid, \$2.15.

This work treats of the care of the ailing from the beginning to the present time, the manner in which the problem was, and is, met makes a story that is as interesting, as delightful, as instructive, to the general reader as it is to the nurse.

### THE HEART OF VOLSTEAD

"Look here!" bellowed an irate customer in the general store of Four Corners. "You say you won't sell me a shovel unless I get a permit from the authorities and sign my name in that book. What's the big idea?"

"We ain't takin' chances," answered Proprietor Hoskins firmly.

"Gov'men's mighty keeful these days. You fellows buy a shovel, dig up the ground, plant barley, make it into malt, and there you are. No sir-ree!"

### PALPABLE AFFINITY

Grimm-Deth

Mr. and Mrs. John Deth of Kerns avenue announce the engagement of their daughter, Mildred E., to Walter A. Grimm.—*Buffalo paper.*

## IT DOES HAPPEN THAT WAY, SOMETIMES

In his "Best Stories in the World," Tom Masson tells of a successful business man who was describing his advance in the commercial world.

"I was clerking in a grocery store and making \$9.00 a week," he said; "but like many other young men, I fell in with a bad crowd and was induced to gamble."

"And so you were tempted to take money which did not belong to you?" suggested the long-faced man.

"No," replied the successful merchant, thoughtfully. "I won enough in a week to buy the grocery."

## A TRUE OPTIMIST

He was very poor, but he had won the love of the millionaire's daughter, and had come to ask her father for her hand.

"Well," asked the father in a very discouraging tone of voice, "what are your prospects? Is there any chance for advancement in the line of work in which you are now engaged?"

"Is there a chance?" said the young man. "I should say there is some chance. Why, sir, the establishment where I work employs 22,000 men and my job is next to the lowest in the place!"

## TRUTH IN ADVERTISING

Over a picture of the largest and newest hotel in Chicago appears the headline in the last issue of the Clubwoman's World: "Where the Ill. Fed. Women Lunched."—*Chicago Tribune.*

## INFANTILE SEXUALITY

It is my conviction that the greatest advance for the prevention of nervous and mental diseases and for the adjustment of social problems was made by Freud when he said, "In a normal *vita sexualis* no neurosis is possible," and at the same time advanced the concept of the *infantile sexuality*.—Brill, A. A.: *Psychiatric Quarterly*, July, 1928.

For 55 years, the State Bank and Trust Company has been one of the factors in the development of Evanston and the North Shore.

Invested Capital \$1,000,000.00

## STATE BANK and TRUST COMPANY

Orrington at Davis Evanston, Illinois

### THE PALMER TUBERCULOSIS SANATORIUM

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*Director*

SPRINGFIELD, ILLINOIS  
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*Associate Director*

¶New Buildings erected in 1925 afford a Modern and Complete Plant with Many Distinctive Features. ¶Department of Chest Surgery with Hospital Section. ¶All special methods of Diagnosis and Treatment under Expert Supervision. ¶X-Ray Heliotherapy, Occupational Therapy, Nose and Throat and Dental Departments. ¶Rates unusually low.



¶Refinements of Service not to be found in public Sanatoria. ¶Daily Medical Attention and Large Nursing Staff. ¶No Internes or Salaried Physicians. ¶Excellent Cuisine, unusually beautiful Grounds. ¶Thorough Training preparing for Home Care. ¶But one Class of Service permitting no Institutional Aristocracy. ¶Illustrated Circulars on Request.

## WHY BURN THE HOUSE

To evict the tenant? Why dispose of bacteria at the expense of delicate membrane? The mere fact that a corrosive or germicidal product will destroy a given type of bacteria in a trice does not presage a beneficent action on living tissues.

Is it not a fact that germicidal solutions instead of exerting a soothing, reassuring effect actually attack tissues as harshly as they do the offending micro-organisms? Would it not be more logical to apply ALKALOL which is bland and soothing and encourages angry tissues to help themselves, (the only real help for them) also aids by causing solution of tissue debris and by mechanical sweeping insures removal of pathologic accumulations?

For your own comfort (or your patient's) why not try ALKALOL in eyes, nose or throat with the liberal sample we send for your card?

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Gentlemen: Please send me a sample of  
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Taunton, Mass.



### TIMES CHANGE

"You must wake and call me early, call me early, mother dear."

That was often said to mothers by the girls of yesteryear;

But the girls now tell their maters, as they start out for a spin.

"You must wake up early, mother, someone's got to let me in."—Judge.

### MY PAW

Maw sez the two standards of moralitee  
Is causin a state of the morals that's loose,  
And she says the rule of the game otta be  
The same fer the gander they are fer the goose.

But Paw sez these notions is not worth a cuss  
They're preachin these modern high brow days,  
For no feller *can* be as polyga-mus  
As most of the wimmen is now days.

—B. H.

### OWLISH

First Negro: "Whaffo' you lookin' so unnecessary, Glutinous?"

Second Negro: "Ah feels like a dumb owl, Predicament."

"Reveal yo' meanin', man."

"Ah jes don't give a hoot."—Tid Bits.

### ARITHMETIC BUGS

A dusky son of Alabama was busily engaged in a cootie hunt. When asked by a sergeant what he was doing, he replied:

"I'se a-huntin' fo' dem 'rithmetic bugs."

"Why do you call them 'rithmetic bugs?"

"Cause dey add to ma misery, dey subtracts from ma pleasure, dey divides my attention, and dey multiply like hell."

### CORRECT DIAGNOSIS

"Are you sure," an anxious patient asked a physician, "are you sure that I shall recover? I have heard that doctors sometimes give wrong diagnoses, and have treated patients for pneumonia who afterwards died of typhoid fever."

"You've been woefully misinformed," replied the medico indignantly. "If I treat a man for pneumonia he dies of pneumonia."—The Tatler.

### NOT SO BRAVE

Rastus: "Ah done hear yo' stayed in de haunted house last night. What hapepned?"

Sambo: "Bout two o'clock Ah woke up an' a ghost come frew de side wall es' if de wall wasn't dere."

Rastus: "An' what did yo' do?"

Sambo: "Boy, Ah went frew de other side wall de same way."

### Convenience — Comfort

## The ROAD to ROCHESTER Minnesota



### Rochester-Minnesota Special

Lv. 8:00 pm . . Chicago . . Ar. 7:30 am

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## CHICAGO & NORTH WESTERN RY.

### THE CANNY SCOT

Mrs. Gordon came into the house in a state of great alarm.

"Tammass, Tammass," she exclaimed, "there's a cow in the garden!"

"Dinna stand here wastin' valuable time," replied Tammass, "get back and milk it before it gets oot."

### PREVENTING CONTAGION

Doctor: "Have you taken every precaution to prevent spread of contagion in the family?"

Rastus: "Abs-lutely doctah; we've eben bought a sanitary cup an' we all drink from it!"

### VERY COSTLY UPKEEP

First Roman (at a Christian massacre)—"We've got a capacity crowd, but still we're losing money. The upkeep on the lions must be pretty heavy."

Second Roman—"Yes, sir. These lions sure do eat up the prophets."—The Christian Advocate.

### POSSIBLY A WRONG DIAGNOSIS

Physician—From this brief examination I am of the opinion that you are suffering from clergyman's sore throat.

Patient—The hell you say!

Physician (hastily)—But it is quite possible I'm wrong. I will look again.

(Continued from page 16)

Perry .....	E. J. Burch, Du Quoin.....	J. S. Templeton, Pickneyville.
Platt .....	C. M. Bumstead, Monticello.....	W. N. Sievers, White Heath.
Pike .....	O. H. Berry, New Canton.....	Frank N. Wells, Pittsfield.
Pope .....	No Society.	
Pulaski .....	W. R. Wesenberg, Mound City...	S. Vineyard, Karnak.
Randolph .....	C. O. Boynton, Sparta.....	W. Weir, Sparta.
Richland .....	H. D. Fahrenbacher, Olney.....	F. L. Barthelme, Olney.
Rock Island .....	K. W. Wahlburg, Moline.....	Wm. F. Schroeder, Rock Island.
St. Clair .....	Harvey S. Smith, East St. Louis.	I. L. Foulon, East St. Louis.
Saline .....	J. V. Ferrell, Eldorado.....	G. R. Johnson, Harrisburg.
Sangamon .....	O. L. Zelle, Springfield.....	W. P. Armstrong, Jr., Springfield.
Schuyler .....	W. F. Harvey, Rushville.....	H. O. Munson, Rushville.
Scott .....	C. A. Evans, Bluffs.....	J. W. Eckman, Winchester.
Shelby .....	E. M. Montgomery, Cowden.....	C. H. Hulick, Secy., Shelbyville.
Stark .....	J. C. Williamson, Toulon.....	Clyde Berfield, Toulon.
Stephenson .....	Sara E. Hewetson, Freeport.....	K. B. Rieger, Freeport.
Tazewell .....	C. F. Grimmer, Pekin.....	N. D. Crawford, S. Pekin.
Union .....	I. C. Stewart, Anna.....	W. J. Benner, Anna.
Vermillion .....	W. C. Dixon, Danville.....	G. T. Cass, Danville.
Wabash .....	E. P. Kenelpp, Mt. Carmel.....	H. A. Elkins, Mt. Carmel.
Warren .....	H. S. Zimmerman, Cameron.....	Chas. P. Blair, Monmouth.
Washington .....	P. B. Rabenneck, Nashville.....	G. A. Green, Nashville.
Wayne .....	John D. Boggs, Fairfield.....	J. T. Blakely, Fairfield.
White .....	F. C. Sibley, Carmi.....	John Niess, Carmi.
Whiteside .....	A. H. Foster, Erie.....	L. S. Reavley, Sterling.
Will-Grundy .....	E. A. Kingston, Lockport.....	P. E. Landmann, Joliet.
Williamson .....	R. J. Hyslop, Herrin.....	B. Socoloff, Clifford.
Winnebago .....	John Porter, Rockford.....	K. G. Woodward, Rockford.
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A homelike Sanitarium facing Lincoln Park. Modern facilities for scientific diagnosis and treatment. Blood, Spinal Fluid analysis. Supervised by full time physician with psychiatric training.

OPEN TO THE MEDICAL PROFESSION

J. D. Warrick, M. D., Med. Dir.



### MISLEADING

"Doctor, my eyes are bothering me a bit; see what you can do for me in the way of glasses."

"Take a seat, sir. And now tell me what kind you've been wearing."

"None, I've never worn glasses in my life. Never needed 'em before."

"Indeed! You will pardon my mistake, but I judge from the mark on the bridge of your nose that you——"

"Oh! That mark? I got that from drinking home-brew out of a fruit jar."—*Boston Transcript.*

### TOO LATE!

The story is told of a gentleman who attended a religious convention near New York City about the middle of December and at its finish went to the Big City for a few days during Christmas week. Writing to his wife about the place, he said: "New York is a wonderful city—but I do wish that I had come here before I was converted."

### GROUP MEDICINE

A vivacious old lady had been carefully studied by the group and was much interested and flattered by the attention she had received. As the committee approached her bedside with the verdict, she cried, "Well, doctors, have you decided to operate or just let me get well?"

### WHAT'S THE HURRY!

Let Dr. R. tell the story.

After an office examination Dr. R. had prescribed for Mrs. C. He had given her some one-tenth grain tablets which were to be taken one every half hour and be followed in the morning by magnesium sulphate. She was to report how she felt in a few days by letter.

About a week later the doctor received a letter from Mrs. C. which told of her present condition and which ended:

"I have taken twenty Calomel tablets and a dose of salts.

"Yours truly in haste."



Leaves from a

Therapeutic

Notebook

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THE keynote of the success of BiSoDoL as an effective alkalizing agent is the Quick Relief that it affords in gastric hyperacidity.

Such familiar symptoms as "sour stomach," eructations after meals, nausea and vomiting are quickly controlled by the average dose of this

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BiSoDoL offers a balanced combination of the sodium and magnesium bases, together with bismuth subnitrate, digestives and flavorings.

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Gives perfect uplift and is worn with comfort and satisfaction. Many variations of the "Type N" Belt provide support in Ptois, Hernia, Obesity, Pregnancy, Sacroiliac Strain, etc.

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# ACTEROL

## Vitamin D and Rickets

**A**CTEROL contains 100 times as many vitamin D units as cod liver oil.

Cod liver oil owes its vitamin D activity to the small amount of activated ergosterol it contains.

Acterol is pure ergosterol activated in a solution of vegetable oil.

Its safety and efficiency have been demonstrated on infants at five universities and by hundreds of physicians in the United States.

Our book containing over 300 references on its administration to infants and animals will be sent to any physician.

### DOSES

To promote proper growth of teeth of child *in utero*, give mother 20 drops daily. To protect infants from rickets, give 8 to 10 drops daily. For premature infants, 15 drops daily. For curative dose, 15 to 20 drops daily. For severe rickets, 20 to 30 drops daily.



### ADVANTAGES

Vitamin D potency always uniform and dependable. Every lot standardized by biological assay. Can be given by drops instead of teaspoonfuls. No unpleasant taste or odor. Affords greater protection than any known anti-ricketic substance.



1/10 Gram

Acterol may be given in any food prescribed by physicians for infants and children. It adds vitamin D value to such foods as milk, vegetable soups, puddings, jellies, ice cream, etc.

\*  $\left[ \begin{array}{c} 1/10 \text{ gram of activated ergos-} \\ \text{terol is equivalent in vitamin} \\ \text{D potency to} \end{array} \right] *$



1 barrel of Cod Liver Oil

Samples and Literature Supplied on Request

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Manufacturers of Infant Diet Materials Exclusively

*A valuable  
contribution to the symptomatic  
treatment of epilepsy!*

THAT is what specialists in neurology consider Luminal. In institutional and private practice, Luminal is widely employed to restore epileptics to useful lives. Volumes of literature demonstrate that Luminal accomplishes this by controlling the seizures and by improving the mentality.

Luminal has also been found effective in migraine, vomiting of pregnancy, eclampsia, obstinate insomnia, tabetic crises, etc. In smaller doses it is a dependable sedative for hysteria, neurasthenia, chorea, visceral neuroses, climacteric disturbances, and hyperthyroidism.

Many years of experience, chemical skill and rigid control of every step in the synthesis of Luminal have resulted in a Winthrop product of incontestable quality.

Supplied in *tablets* of  $1\frac{1}{2}$ ,  $\frac{1}{2}$  and  $\frac{1}{4}$  gr.; also in *Elixir of Luminal* ( $\frac{1}{4}$  gr. to teaspoonful).

**LUMINAL**

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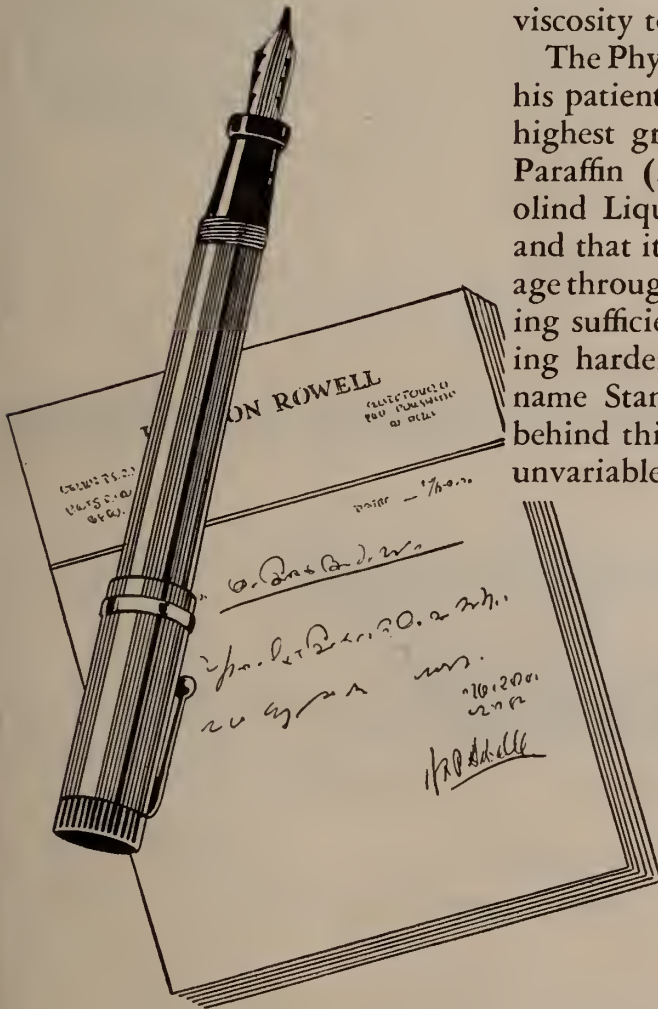


# Your Prescription

THE Physician of today knows what remedies are best to use on a certain case; he is well qualified to do his own prescribing. He does need to know, however, the quality of the ingredients that he prescribes.

In cases of intestinal stasis when mineral oil is prescribed, it is important that the oil is absolutely pure, that it have high viscosity to prevent leakage.

The Physician who wishes to be sure that his patients are getting mineral oil of the highest grade specifies Stanolind Liquid Paraffin (Heavy). He knows that Stanolind Liquid Paraffin is absolutely pure, and that its heavy body assures slow passage through the intestinal tract, thus allowing sufficient time for thoroughly softening hardened feces. He knows that the name Standard Oil Company (Indiana) behind this mineral oil is a guarantee of unvariable high quality.



*Stanolind Liquid Paraffin (Heavy) is carried in stock by all leading drug stores and is used in most hospitals, or it may be ordered from us direct. It is sold only in bulk and is not advertised to the general public.*

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It has been found that Nujol, taken regularly, is a great help in relieving this condition and keeping it from becoming worse. Nujol overcomes constipation by *lubrication* and makes all movements soft, easy and painless. Moreover, Nujol has a soothing emollient effect on inflamed membranes, and so relieves irritation.

Rectal fissures are also the painful result of constipation. Here again regular treatment with Nujol affords relief. It overcomes constipation and gives the

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Nujol is recommended as a means of avoiding both these common difficulties and of relieving them when they have occurred.



## Nujol

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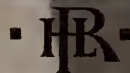
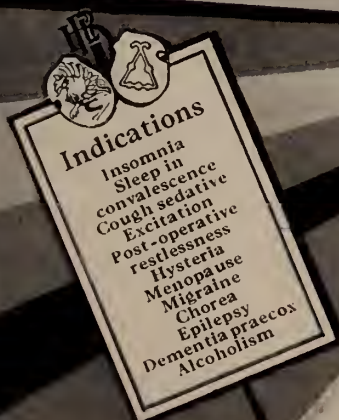


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MANY women who suffer from ovarian dysfunction are afflicted with a more or less constant headache of the splitting, rending type.

Experience has shown that these women benefit very materially from pituitary feeding, in addition to ovary and thyroid for the dysovarism.

The reason is that the pituitary gland, in an endeavor to compensate for the ovarian hypofunction, becomes functionally hyperactive and consequently engorged. This increase in its size causes an intracranial tension with a consequent pressure headache. As soon as this pituitary engorgement is made physiologically unnecessary—either by the regulation of the ovarian trouble or by a replacement of a part of the missing pituitary principle by organotherapy—the headache disappears.

### *Thyro-Ovarian Co. (Harrower)*

in addition to Endovarin (ovarian substance with corpus luteum, purified by our special defatting method) and Endothylin (thyroid, double U.S.P. strength), contains enough whole pituitary to overcome successfully this type of headache.

Prescribe Thyro-Ovarian Co. (Harrower) also in that difficult case of amenorrhea or menopausal imbalance. Dose: 2 sanitablets t.i.d., a.c. for ten days before menses; omit for ten days at onset of menses; 1, t.i.d. until ten days before menses; repeat.

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is a uniform, permanent, unflavored emulsion of Milk of Magnesia and Mineral Oil, easily taken, non-disturbing to the stomach, mild but dependable in action and effect.



In intestinal stasis with consequent constipation and subsequent auto-toxemia, in oral or gastric hyperacidity, intestinal fermentation, gastric or duodenal ulcer, colitis, hemorrhoids, before or after operation, during pregnancy and maternity, in infancy, childhood or old age.

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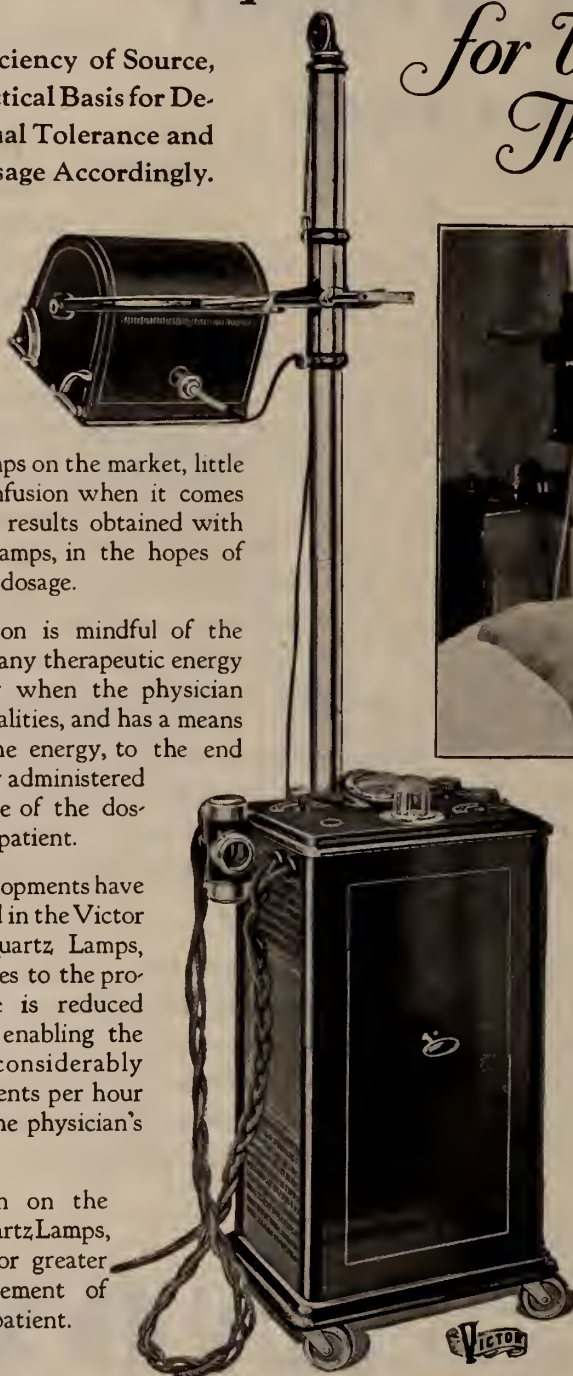
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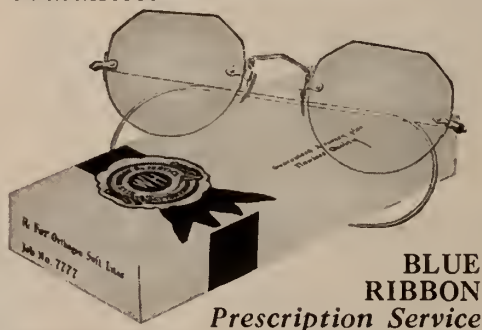
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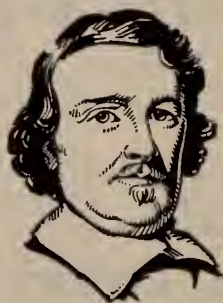


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(Continued on page 48)



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BIRDSEYE VIEW OF THE SUMMIT HOSPITAL PROPERTY

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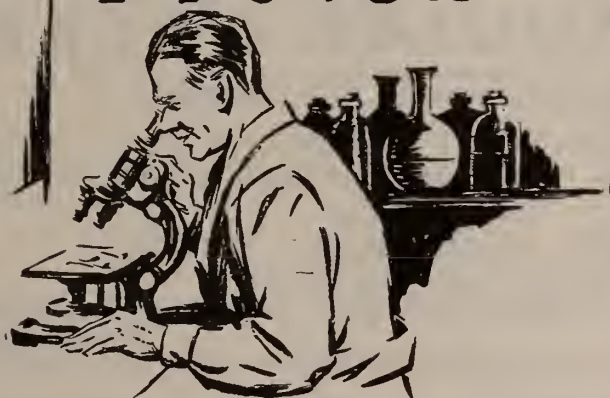


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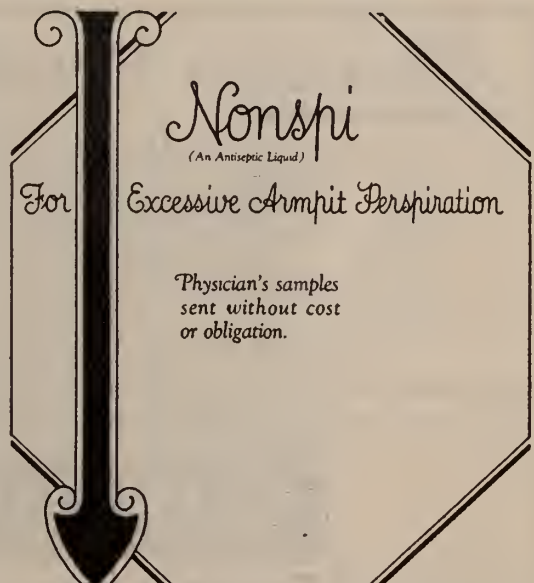


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### Book Notes

**THE SCIENCE OF PSYCHOLOGY.** By Raymond Holder Wheeler. New York. Thomas Y. Crowell Company. 1929. Price \$3.75.

This work is based upon years of laboratory work, and is replete with results of such experimental investigation, including recent material on the measurement of social attitudes; animal and child behavior; influence of social environment on the intelligence quotient; the learning process; apparent movement; brain patterns in primates, etc.

**HEREDITY AND PARENTHOOD.** By Samuel Christian Shumaker. New York. The Macmillan Company. 1929. Price \$2.50.

**MEDICAL STATE BOARD QUESTIONS AND ANSWERS.** By R. Max Goepp, M. D., Professor of Clinical Medicine in the Graduate School of Medicine, University of Pennsylvania. Sixth Edition, Thoroughly Revised. Octavo volume of 754 pages. Philadelphia and London: W. B. Saunders Company. 1929. Cloth, \$6.00 net.

This work has run through six editions. The title of the work indicates the scope of information. Definitions have been taken freely from standard text books, often without any change of wording.

**THE COMMON HEAD COLD AND ITS COMPLICATIONS.** By Walter A. Wells, M. D. With an introduction

by Hugh S. Cumming, M. D. New York. The Macmillan Company. 1929. Price \$2.75.

The aim of this book has been not only to answer the questions pertaining to colds, but to explain to what extent colds are dependent upon general health as well as local conditions.

**THE SURGICAL CLINICS OF NORTH AMERICA.** (Issued serially, one number every other month.) Volume 9, number 4. (Mayo Clinic Number—August, 1929) 208 pages with 72 illustrations. Per Clinic year (February, 1929 to December, 1929.) Paper \$12.00; Cloth, \$16.00. Philadelphia and London.

The contributors to this number are Doctors Adson, Benedict, Brown, Buie, Caylor, Counsellor, Eubanks, Jr., Figi, Hunt, Jones, Judd, Learmonth, Lillie, Lundy, Mann, Markowitz, Masson, McIndoe, Moersch, Palmer, Passalacqua, Pope, Rankin, Sistrunk, Swan, Walters, Wilhelmj and Yesko.

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C. Stein (Wiener klin Wochenschr, 41:1595, 1928)

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(Continued from page 24)

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J. W. Geary Grant (British Medical Journal, No. 3533:518, Sept. 22, 1928)

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### THE PROPERTIES OF THE BLOOD IN DIABETES MELLITUS AND THE INFLUENCE OF INSULIN ON THEM

Zuckerstein and Streicher (Deutsches Archiv f. klin. Med., 161:323, 1928)

Under the influence of insulin a 10 to 15 per cent decrease in the size of the erythrocyte occurs following fall of the sugar content, through which the viscosity is correspondingly lowered. In all cases, insulin calls forth a marked retardation of the rapidity of the fall. Insulin injections have as result a decrease of globulin in the blood serum and also of the cholesterolin.



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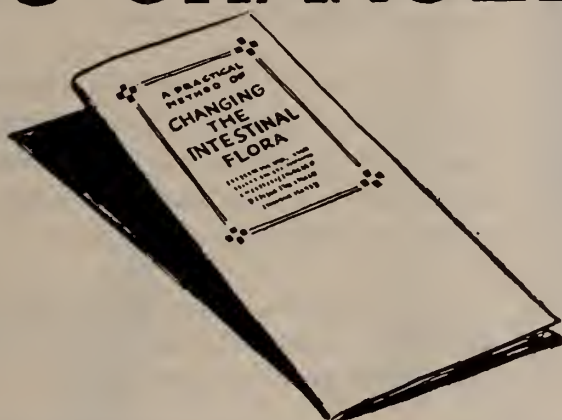
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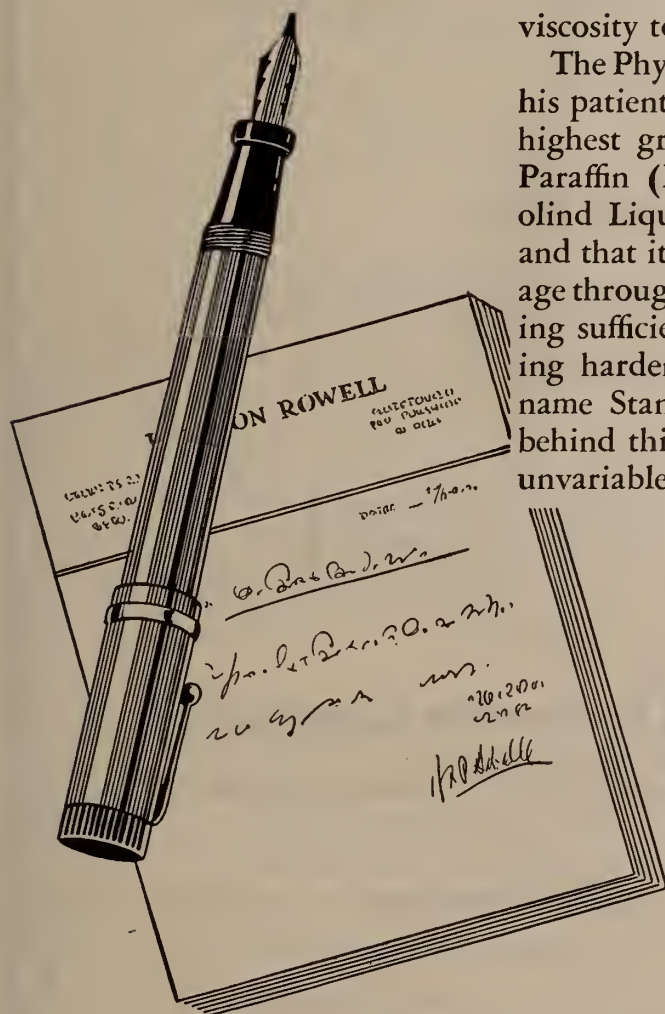


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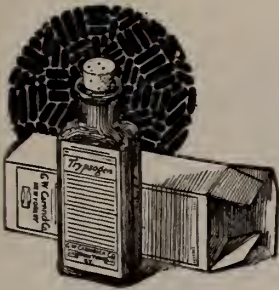
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It has been found that Nujol, taken regularly, is a great help in relieving this condition and keeping it from becoming worse. Nujol overcomes constipation by *lubrication* and makes all movements soft, easy and painless. Moreover, Nujol has a soothing emollient effect on inflamed membranes, and so relieves irritation.

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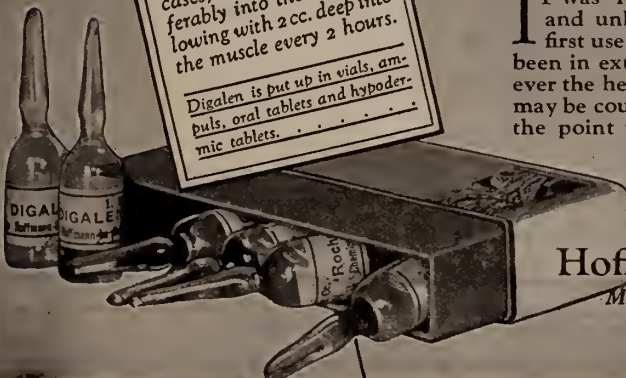
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*didn't have*

## Hypoadrenia



If he had, he would have been weak, run-down, with low blood-pressure and sub-normal temperature. He would never have had pep and energy enough successfully to go through with that wild, midnight ride, warning the inhabitants of the villages and hamlets through which he passed, of the danger that threatened.

Unfortunately, many people to-day are not as Paul Revere was. In these days of stress and nervous strain the adrenals have more demands than they can successfully cope with. They become played-out. The result: slow convalescence following acute infections, summer colds that hang on, a lack of energy (mental and physical), and neurasthenia.

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This preparation is made by the process originated by the late Dr. K. K. Koessler and his co-workers, Drs. M. T. Hanke and S. Maurer, in the laboratory

of the Otho S. A. Sprague Memorial Institute at the University of Chicago. Its present use is in those cases of pernicious anemia where the patient is unable to take solid food. As the condition improves, it may be employed to vary the monotonous solid liver diet.

Concentrated Liver Extract (Armour's) is a specific in pernicious anemia. It will improve the blood picture as well as the general condition of the patient, and correct the unpleasant symptoms associated with this malady.



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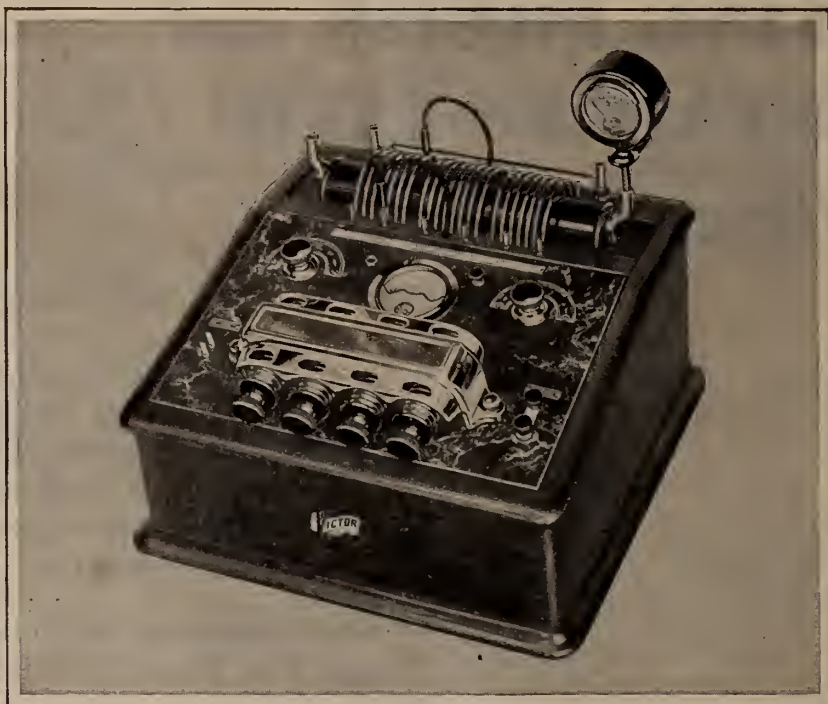
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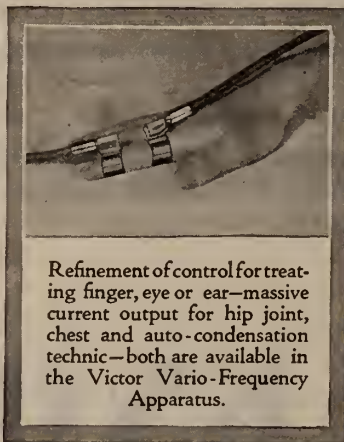


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"Hold on!" he said faintly, "roll me on a barrel and get some of this water out. It'll weaken the licker!"—Exhaust.

### BARNUM WAS RIGHT

I am sure that you will be interested to learn that the letter you recently forwarded me from Tennessee was from a man who seems to have read my article on Trichopathy (Clinical Medicine and Surgery, March, 1928, p. 204) and to have taken it seriously. *He inquired about instruction.* Surely, Barnum was right!

Grinnell, Iowa.

Edward B. T. Spencer.

### TWO-HANDED COURTING

"Girls were harder to kiss in your days, weren't they, Grandpa?"

"Well, maybe; but it wasn't so blame dangerous. The ol' parlor sofa wasn't apt to smash into a tree jest about the time ye got all puckered up."—*Catalina Islander.*

Joshua Crabapple says: "The difference between a hill and a pill is, the former is hard to get up and the latter hard to get down."—*Nebraska M. J.*

### UNDER THE MISTLETOE'S BOW

There was a young fellow named Syd,  
Who kissed his girl's eye on the lid.

Said she to the lad,

"Your aim is quite bad;

You should practice a bit"—and he did.

—Anon.

### SULPHARSPHENAMINE FOR WARTS

Doses of sulpharsphenamine averaging 0.4 Gm., dissolved in a small amount of water and injected into the gluteal muscles, cured 6 cases of obstinate warts. Each patient received but one injection.—Dr. R. L. Sutton, in *J. A. M. A.*, Oct. 2, 1926.

"Pa, what is a stock exchange?"

"A place, my son, where an outsider is apt to exchange a stock of money for a stock of experience."—*New York Mail.*

### GOD MADE THE FIRST TALKING MACHINE

Willie—"Did Mr. Edison make the first talking machine, pa?"

Pa—"No, my son. God made the first talking machine, but Edison made the first one that could be shut off."—*Bell Telephone News.*

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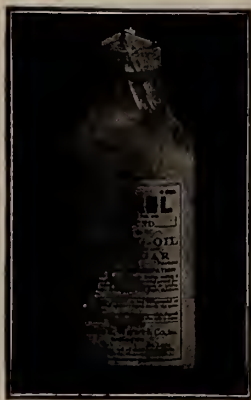
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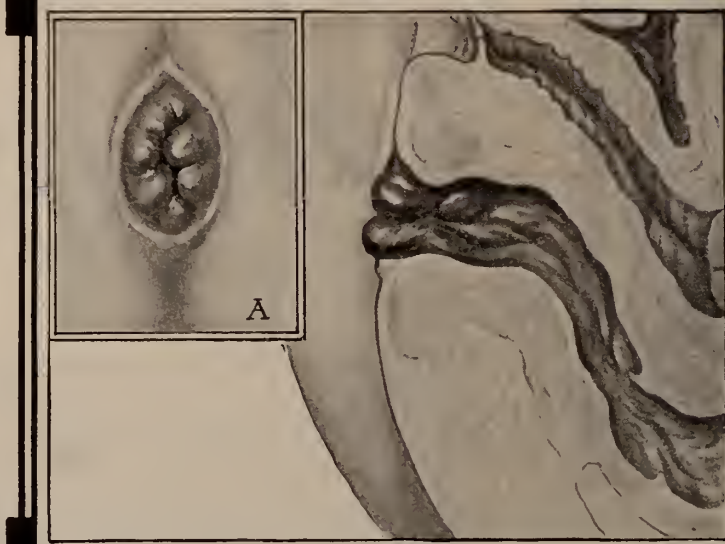
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## INSULIN AND CARBOHYDRATE TOLERANCE

William M. Brace (*Annals of Internal Medicine*, 1:203, October, 1927)

To date there has been no evidence advanced which shows that the daily administration of insulin over long periods of time has been followed by a gain in the total glucose tolerance of a diabetic, which could not be explained by desugarization or recovery from infection.

A failure to obtain evidence of improvement of the tolerance for glucose in five patients, who had received weighed, high fat, low protein and low carbohydrate diets and daily insulin over periods varying from 32 to 45 months, gave no ground for believing that insulin is capable of effecting a cure or a partial cure of human diabetes mellitus. Insulin has shown no more ability to arrest the downward progress of the disease than the earlier treatment without the drug. Each of the above five patients lost tolerance during the period of treatment with insulin.

## EFFECT OF IODIN UPON EXPERIMENTAL HYPERTHYROIDISM IN MAN

Donald A. Carson and William Dock (*American Journal of the Medical Sciences*, 176:701, November, 1928)

The conception that hyperthyroidism is due to a qualitatively perverted secretion of the thyroid gland is not generally entertained at the present time.

By the ingestion of thyroid extract, four adult males being used for the experiment, a state of artificial hyperthyroidism was produced.

Iodin had no effect upon this pathologic condition. The authors attribute the impotence of iodine in these four cases in which the thyroid was not diseased to the fact that the gland itself must be the site of action of iodine in hyperthyroidism. As they say: "The results suggest that the therapeutic effect of iodine in hyperthyroidism is produced by its action on the thyroid epithelium."

## THE FORCED ALIMENTATION TREATMENT BY INSULIN

D. Bénès (*Presse méd.*, 36:1386, 1928)

Bénès reports concerning 23 cases in which insulin-forced alimentation treatment was used. Three cases remained refractory. In the remaining cases the appetite as well as the weight were favorably influenced by the daily injection of 30 to 40 insulin units. Following termination of the cure a further increase in weight appeared in three cases; in the other cases the weight remained stationary or immediate loss of weight set in. The field of indication is very large; contraindications are furnished by high fever and tuberculosis. During the cure, carbohydrates must be administered in very abundant amounts, in order to avoid incidents of hypoglycemic basis. Favorable influence was also observed in an existing asthma through the insulin cure.

## A FUNNY OLD BIRD

Doc: "Do you sleep on the flat of your back?"

Patient: "No, the back of my flat."—*California Pelican*.

Tom: "Why are your socks on wrong side out, Bob?"

Bob: "My feet were hot and I turned the hose on them."—*Epworth Herald*.

She—"And what did papa say when you told him you couldn't sleep for thinking of me?"

Jack—"He offered me a job as night watchman in his factory."—*Boston Transcript*.

Customer to Tailor: "I brought these trousers to be resealed. You know I sit a lot."

Tailor: "Yes. Have you brought your bill to be receipted? You know I've stood a lot."—*Rock Island Magazine*.

"You hit your husband with a chair? Pray, tell me why you did it, Mabel?"

"I did it," sighed the lady fair, "because I could not lift the table."—*Tri-State Integral*.

Mary: My brother threw a cake at me. One that I made myself, too!

Jane: The brute! He might have killed you.—*San Mateo Centaur*.

## SELLING KISSES

She: "I'm going to sell kisses at the Charity Bazaar. Do you think \$1 each is too high?"

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Young Bride—"Now, dearie, what will I get if I cook a dinner like that for you every day this year?"

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## THE POWER OF THOUGHT

Every time she thinks of sugar, a lump comes up in her throat.

Pessimists and cynics are the wasps of society—hard both to cure and endure.—*Ren Mulford, Jr.*

Basil: "Do you know who that sweet little girl is that I've been dancing with all the evening?"

Gwendoline: "Oh, yes, that's mother!"—*Girls' World*.

Neighbor: "What's all the loud talking about in your house?"

Child: "Oh, father and mother are swapping animals."

Neighbor: "Swapping animals?"

Child: "Yes, mother passed the buck to father and got his goat."—*Rock Island Magazine for December, 1928*.

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He isn't very clever with the driver or the putter,  
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And the boys who play behind him bitter things are  
heard to mutter,  
For he always keeps them waiting on the tee  
But this morning in a crisis he preserved a human life.  
As a surgeon he is noted as a marvel with the knife.

Those who judge him at a table find his auction bridge  
is bad,

And they laugh to see him making foolish plays.  
They belittle him because he loses tricks he should  
have had

And they sneer about the slowness of his ways.  
But if you had a baby that you loved and feared  
you'd lose  
And the need was for a surgeon, he's the man that you  
would choose.

Oh, it's good to be a golfer and at cards to clever be,  
But this life has more important things to do,  
And the fellow you belittle at the table or the tee  
May be a bigger, wiser man than you.

Golf and cards are merely pastimes, and with them  
when we are through

The proof of our achievement is the useful work  
we do.

—Edgar A. Guest.

## CONCERNING A NEW CIRCULATORY HORMONE. II. CONTRIBUTION

H. Kraut, E. K. Frey and E. Bauer (Hoppe Seyler's  
Zeitschr. f. Physiol. Chem., 175:97, 1928)

The authors found earlier that a substance is contained in urine which stimulates cardiac activity. They succeeded in obtaining this substance and also, through the creation of a standard preparation, to measure it comparatively. In blood also the cardiac active substance was demonstrable. Addition of serum inactivates it, without destroying it, since it can again be presented in active form after removal of the inactivator. The authors succeeded in this removal through digestion of the blood in weakly acid reaction with the plant enzyme, papain. The methods of preparation and the properties of the hormones and of the inactivator, as far as they have been determined by the investigations, are described. The hormone has nothing to do with histamin.

## CONCERNING HEPATO-PITUITARY MIGRAINE

Léopold-Lévy (Progrès Méd., 53:2216, Dec. 29, 1928)

On the subject of the communication of M Sédillot, Léopold-Lévy considers the semiology of hypopituitarism and the arguments which plead in favor of pituitary migraine, but he does not accept the idea that the anatomic substratum of all migraines is without exception a congestive attack of the pituitary. He also recalls the importance of thyroid migraine.

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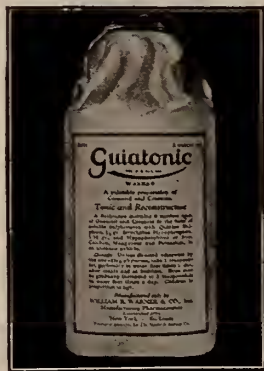
A village bachelor who had finally succumbed to the charms of a willing widow did not appear on the date set for the wedding. The next day he came rather sheepishly to call on the well-nigh frantic bride-to-be.

"Why, Joe!" she exclaimed. "Why didn't you come yesterday afternoon?"

"We-e-ell," he drawled, "I did aim to. But it just looked so much like rain."

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### Book Notes

**OUTLINE OF PREVENTIVE MEDICINE.** Twenty-one Contributors. New York. Paul B. Hoeber. 1929. Price \$5.00.

This work is intended for medical practitioners and students. Prepared under the auspices of the committee on Public Health Relations, New York Academy of Medicine.

**SURGICAL AND MEDICAL GYNECOLOGY TECHNIC.** By Thomas H. Cherry, M. D. With 558-half tone and line engravings, from photographs and pen and ink drawings by the author. Philadelphia. F. A. Davis Company. 1929. Price \$8.00 net.

This work presents to the medical profession, a technical work on Gynecology. The book is not intended as a text for the undergraduate student of medicine. The work is based largely on the author's personal experience.

**VARICOSE VEINS WITH SPECIAL REFERENCE TO THE INJECTION TREATMENT.** By H. O. McPheeters, M. D. Illustrated with half tones and line engravings. Philadelphia. F. A. Davis Company. 1929. Price \$3.50 net.

The accumulating array of evidence as to the shortcomings of surgery in the treatment of varicose veins prompted the author to adopt the injection treatment.

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**STERILIZATION FOR HUMAN BETTERMENT.** By E. G. Gosney and Paul Popenoe. New York. The Macmillan Company. 1929. Price \$2.00.

**A STUDY OF MASTURBATION AND THE PSYCHOSEXUAL LIFE.** By John F. W. Meagher, M. D. Second edition. New York. William Wood & Company. 1929. Price \$2.00.

**MINOR SURGERY.** By Frederick B. Christopher, M. D. Associate in Surgery at Northwestern University Medical School, Chicago. With a Foreword by Allen B. Kanavel, M. D., Professor of Surgery, Northwestern University Medical School. Octavo of 694 pages with 465 illustrations. Philadelphia and London. W. B. Saunders Company, 1929. Price \$8.00 net.

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M. D. Twelfth edition with an index of symptoms and diseases. Philadelphia. P. Blakiston's Sons and Company, Inc. 1929. Price ???.

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PRINCIPLES OF CHEMISTRY. By Joseph H. Roe, Ph. D. Second edition. St. Louis. The C. V. Mosby Company. 1929. Price \$2.50.

This work is an introductory text book of inorganic, organic, and physiological chemistry for nurses and students of home economics and applied chemistry.

A TEXT BOOK OF MATERIA MEDICA FOR NURSES. By Edith P. Brodie, R. N. Third edition. St. Louis. The C. V. Mosby Company. 1929. Price \$2.00.

THE TREATMENT OF DIABETES MELLITUS. By William David Sansum, M. D., Percival Allen Gray, M. D., and Ruth Bowden, B. S. New York and London. Harper & Brothers. 1929. Price \$2.50.

This book is a comprehensive discussion of the

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"What'll ye pay?" asked Si.

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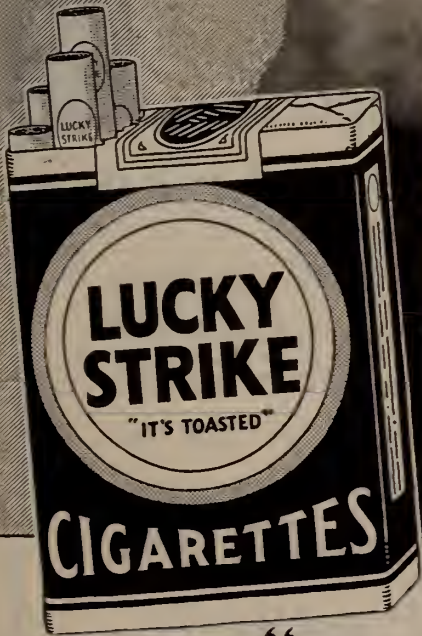
Si scratched his head a minute, then announced decisively, "I'll be darned if I'll work for that!"



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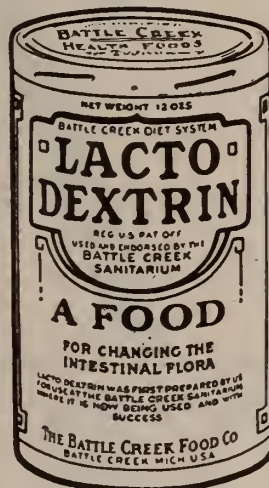
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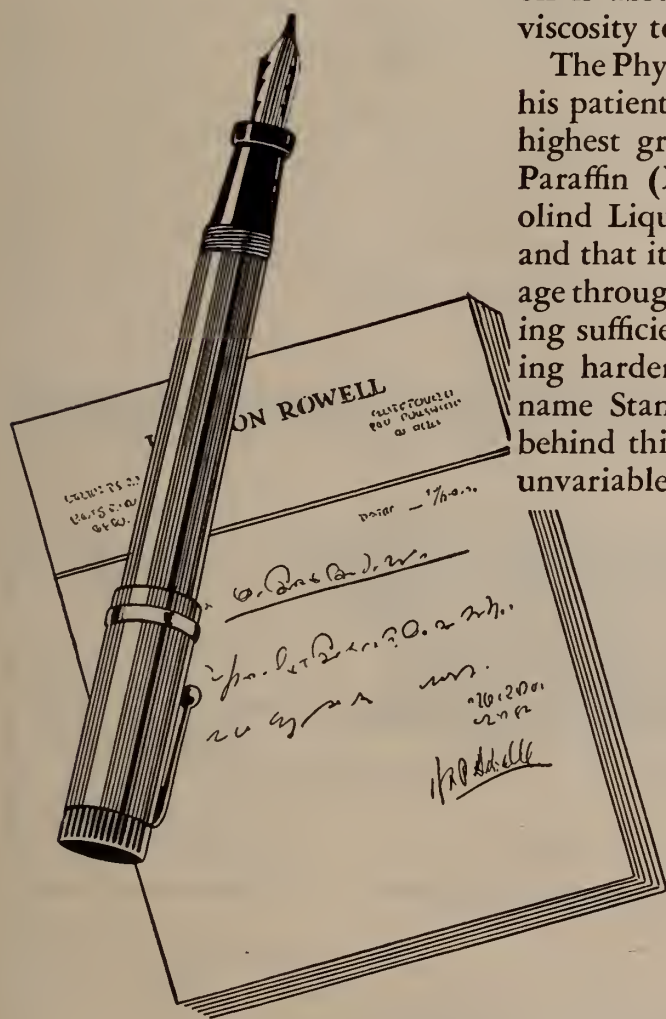


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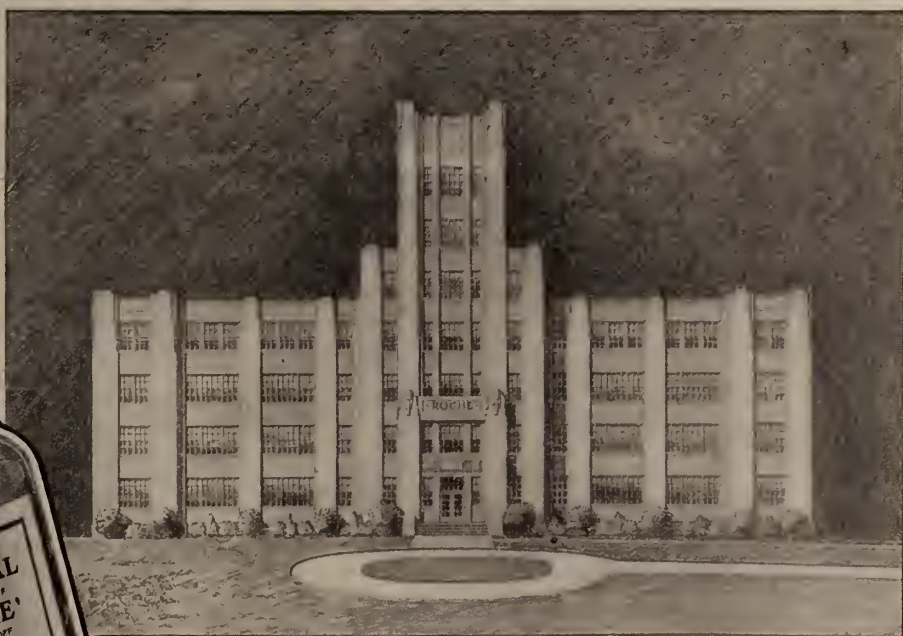
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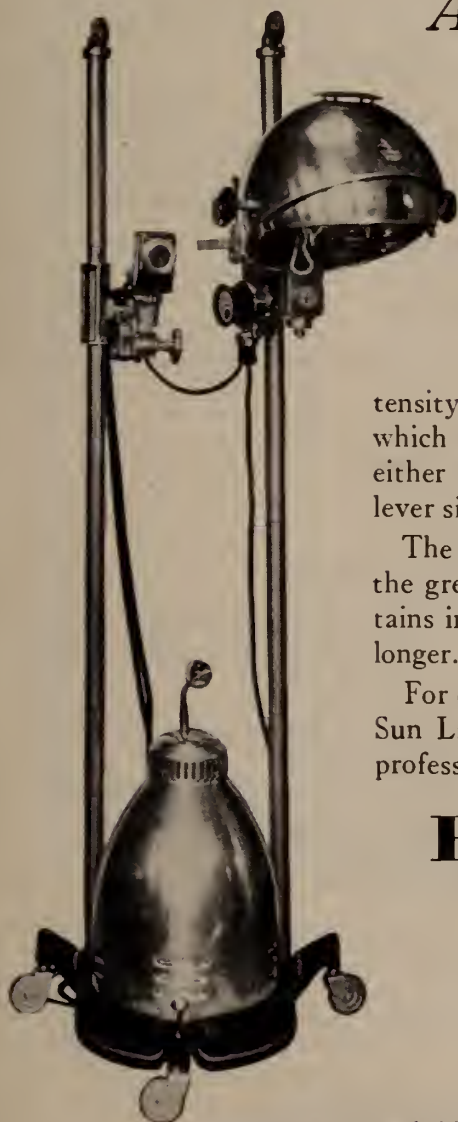
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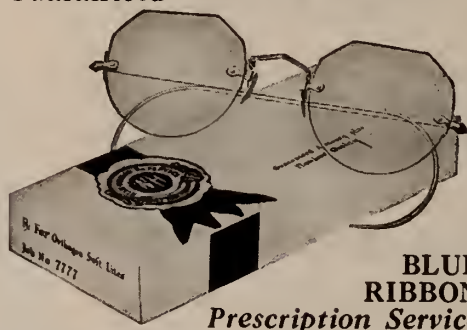
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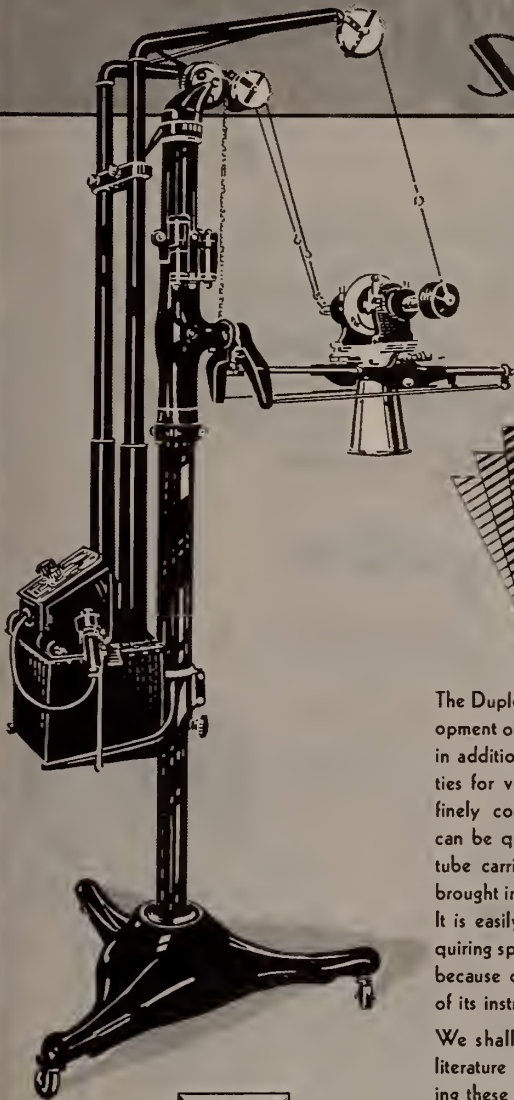
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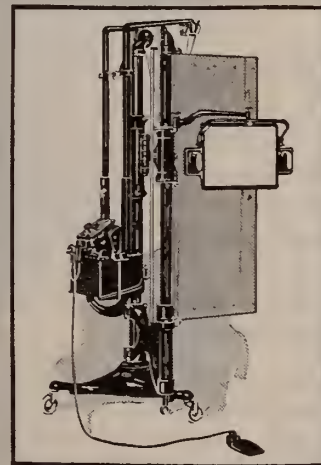


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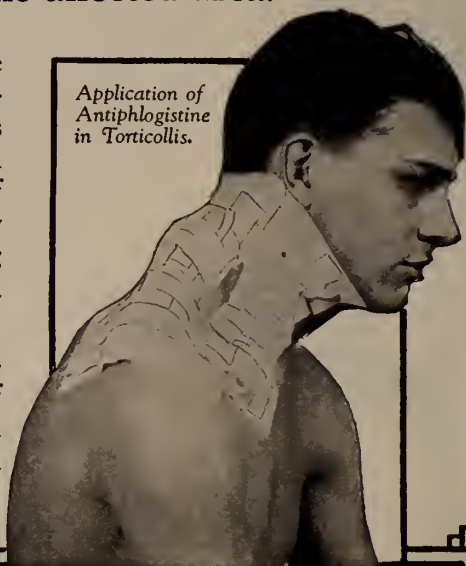
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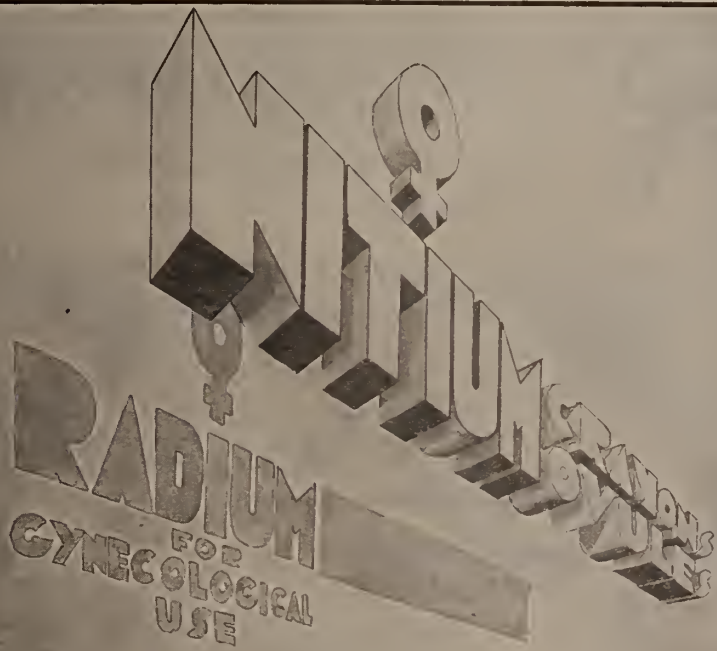
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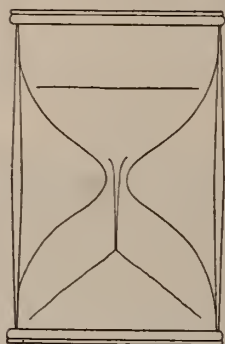
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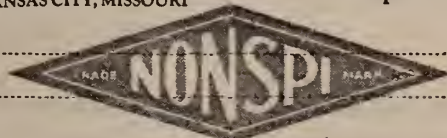
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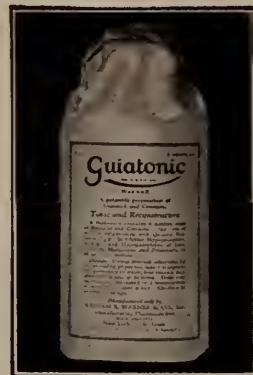
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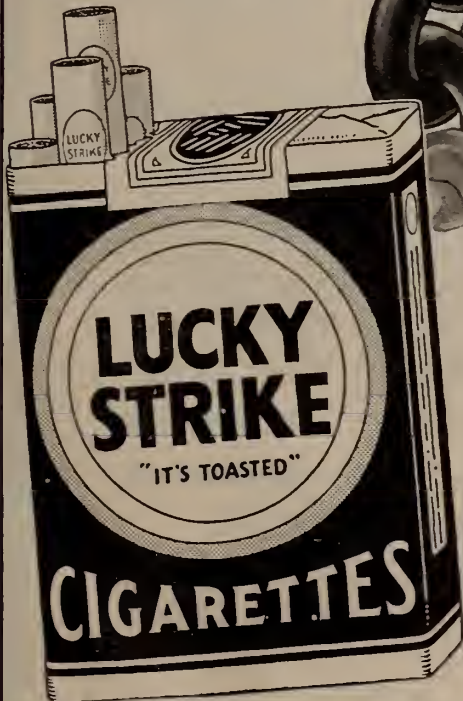




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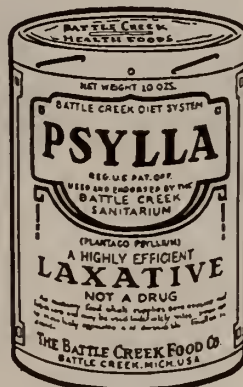
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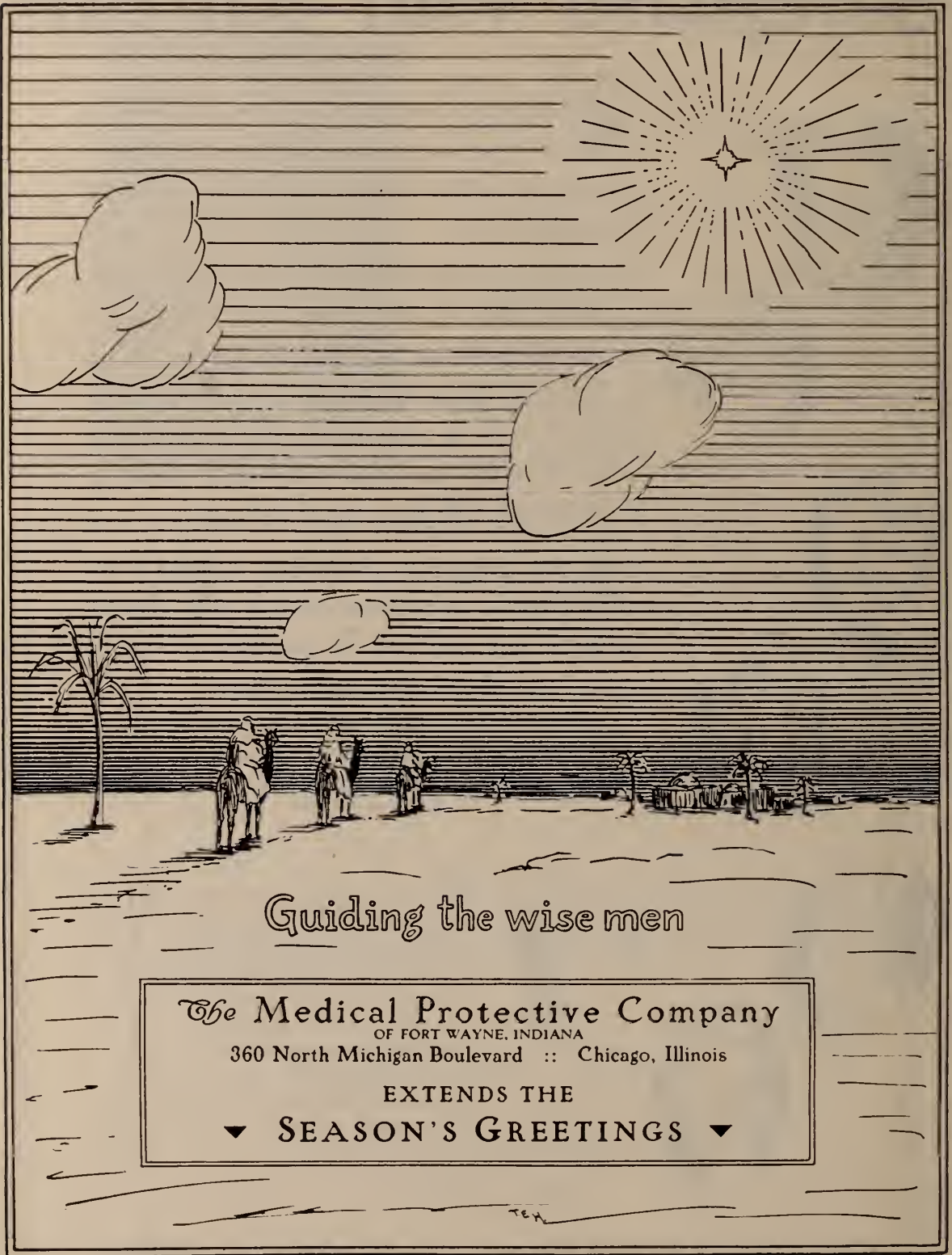
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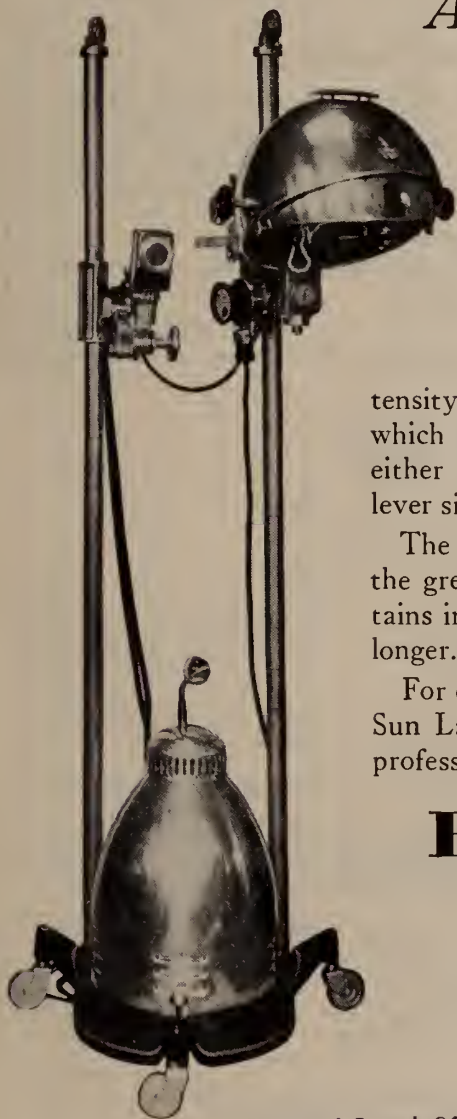
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## KNOX *is the* *real* GELATINE

*Contains No Sugar*

### JELLIED VEGETABLE SALAD (Six Servings)

	Grams	Prot.	Fat	Carb.	Cal.
1 tablespoon Knox Sparkling Gelatine	7	6	....	....	....
¼ cup cold water, 1½ cups hot water	....	....	....	....	....
1 teaspoonful whole mixed spices	....	....	....	....	....
½ teaspoon salt, ½ cup vinegar	....	....	....	....	....
½ cup chopped cabbage	50	1	....	3	....
½ cup chopped celery	60	1	....	2	....
½ cup canned green peas	40	1	....	4	....
½ cup cooked beets, cubed	40	1	....	3	....

Total 10 2 12 88  
One serving 2 2 15

Soak gelatine in cold water for five minutes. Bring to boil water, salt and spices. Pour on gelatine to dissolve it and add vinegar. When jelly is nearly set, stir in the vegetables, pour into mold and chill until firm. Unmold on lettuce and serve with salad dressing. Garnish with sprig of parsley or strip of pimento.

### JELLIED CHICKEN IN CREAM (Six Servings)

	Grams	Prot.	Fat	Carb.	Cal.
1 tablespoonful Knox Gelatine	7	6	....	....	....
¼ cup cold chicken broth or water	....	....	....	....	....
1½ cups boiling chicken broth, fat free	....	....	....	....	....
½ teaspoon salt	....	....	....	....	....
Pinch pepper	....	....	....	....	....
1 cup cooked chicken, cubed	125	24	20	....	....
½ cup cream, whipped	55	1	22	1.5	....

Total 31 44 1.5 526  
One serving 5 7 .... 88

Soak gelatine in cold liquid for five minutes and dissolve in hot broth. Season with salt and pepper and chill until nearly set. Fold in chicken and whipped cream. Turn into molds and chill until firm. Serve on lettuce or garnish with parsley and strip of pimento.

**If** you agree that recipes like the ones on this page will be helpful in your diabetic practice, write for our complete Diabetic Recipe Book—it contains dozens of valuable recommendations. We shall be glad to mail you as many copies as you desire. Knox Gelatine Laboratories, 461 Knox Ave., Johnstown, N. Y.

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Photo courtesy Iola-Monroe Co. (N. Y.) Tuberculosis Sanitarium

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—Ezra Bridge, M. D.  
Supt. Iola-Monroe County  
(N. Y.) Tuberculosis Sanitarium, in Annual Report.

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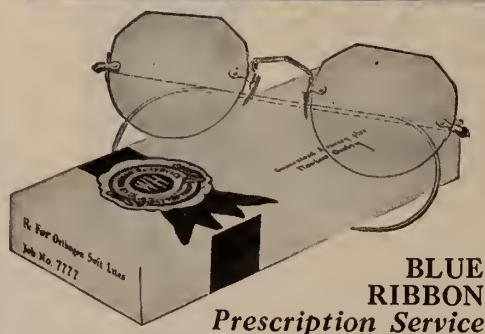
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**RADIUM DEEP THERAPY**



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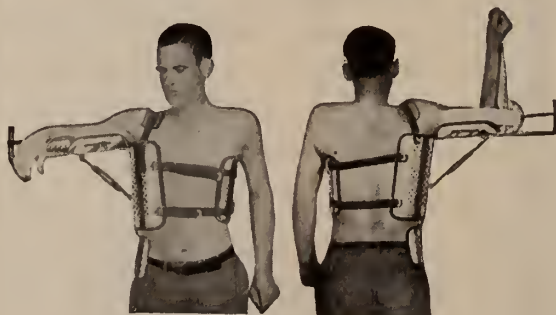
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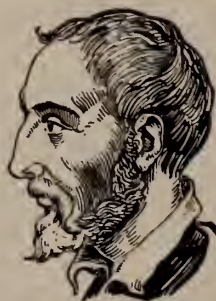
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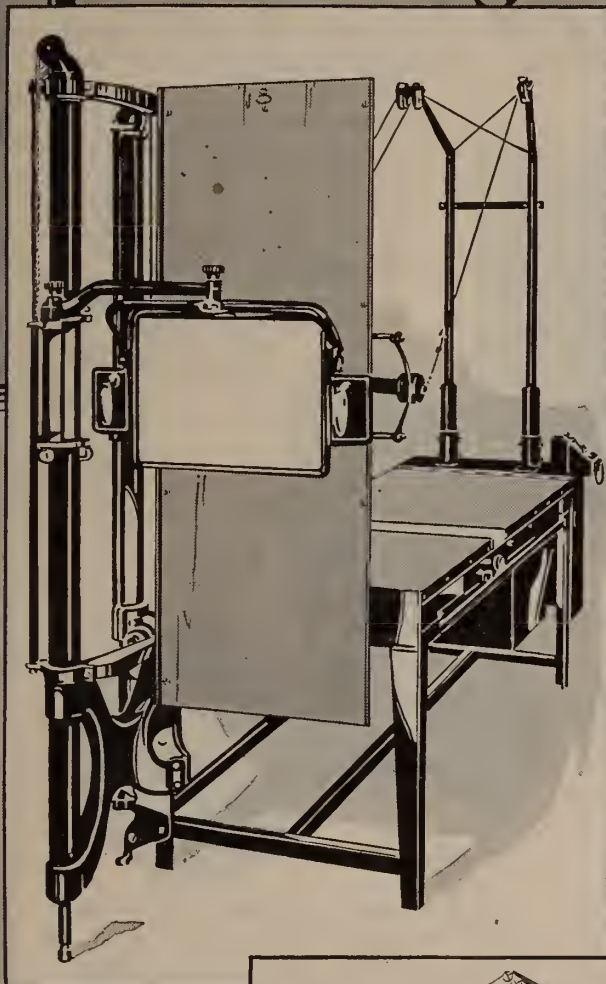
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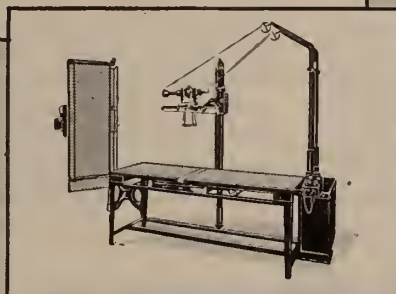
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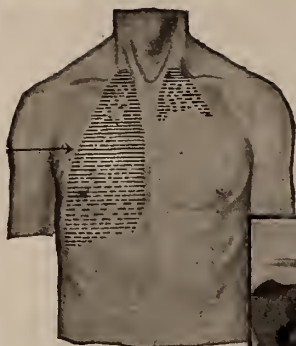
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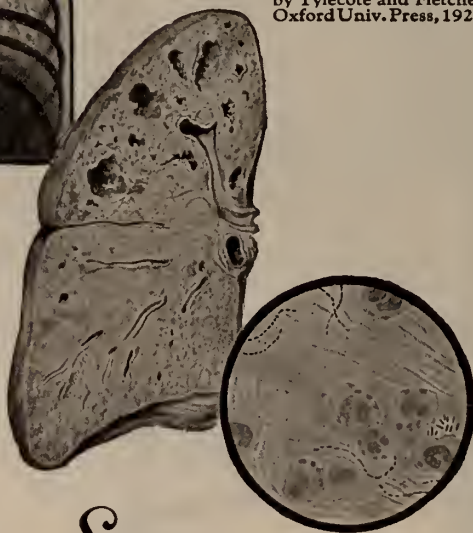
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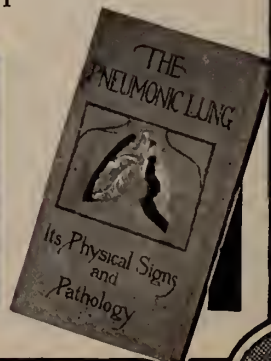
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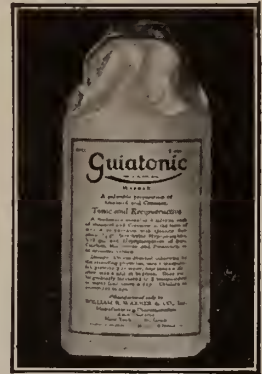
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#### ASEPTIC (LYMPHOCYTIC) MENINGITIS

The type of meningitis described, of which five cases are reported by Henry R. Viets and James W. Watts, Boston (*Journal A. M. A.*, Nov. 16, 1929), is characterized by an acute but relatively mild onset, with headache, vomiting and moderate fever. The disease is self-limited, lasting from three to six weeks. Recovery takes place without residual paralysis. The cerebrospinal fluid showed a marked lymphocytic pleocytosis, without polymorphonuclear cells. The cells may reach 500 or more per cubic millimeter. Protein in the fluid is slightly increased, but the sugar and chloride content do not vary from the average range. The colloidal gold curve suggests meningitis. Tuberculosis meningitis is usually suggested by the clinical appearance and the early cerebrospinal fluid reactions. The fluid, however, does not clot, bacilli are not demonstrable, and the sugar content remains high.

#### CLINICAL EVALUATION OF DRUGS

Ernest E. Irons, Chicago (*Journal A. M. A.*, Nov. 16, 1929), asserts that the first objective in therapeutics is to hold fast to remedies of substantiated and proved value, and to strive to understand and use them better. The information concerning the sources, preparation, uses and doses of drugs, collected in the United States Pharmacopeia, is revised every ten years by the Pharmacopeial Convention, with the omission of those drugs

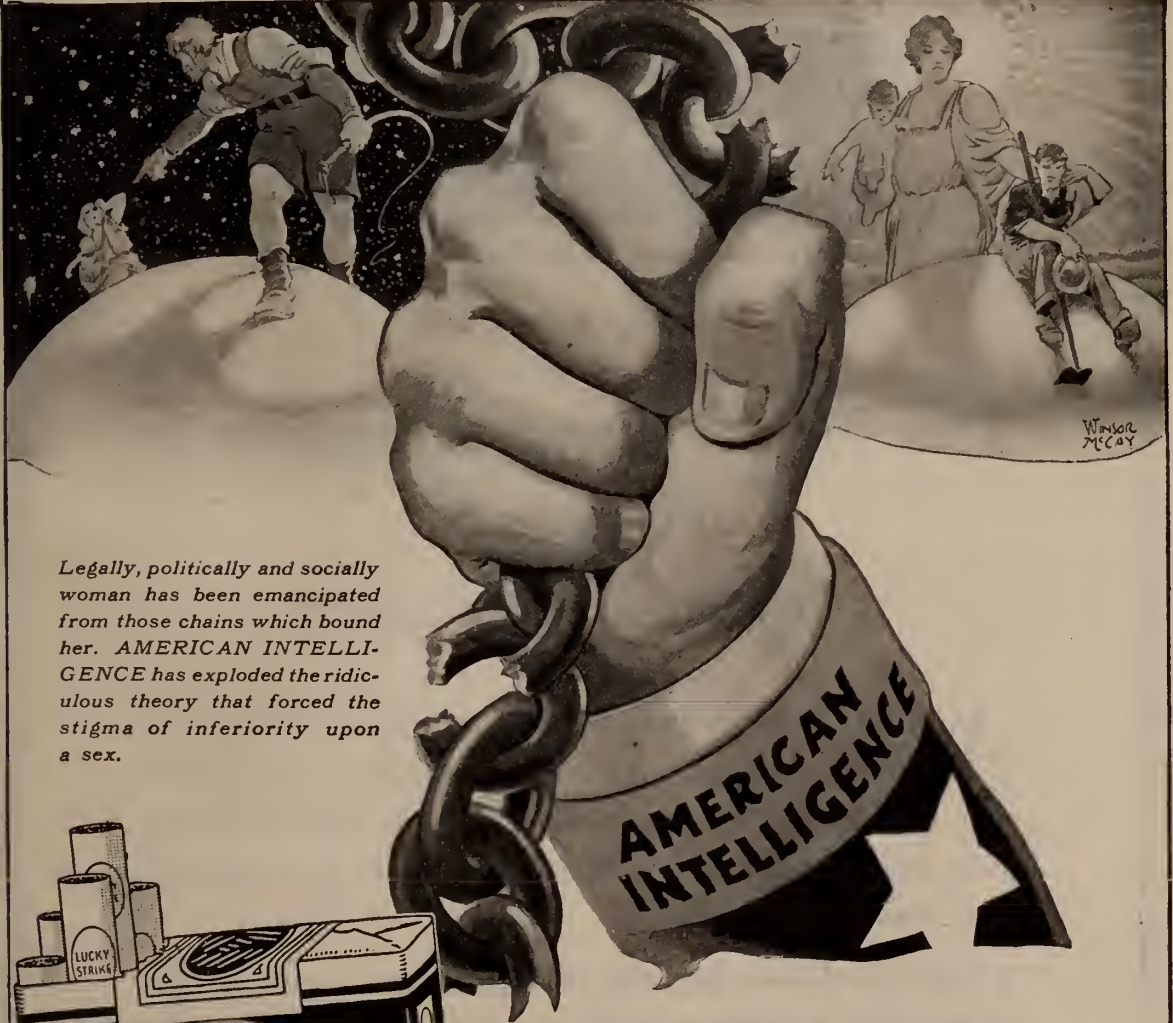
shown by experience to be of relatively little use and the inclusion of new drugs whose value has been established. The second objective, the discovery and evaluation of new drugs and methods of treatment, presents a difficult problem whose solution often requires the effort of many physicians. The final verdict must come from the observation of clinical results, and often can be arrived at only after a period of long and careful study, the duration of which depends largely on the definiteness of effect of the remedy. The clinical value of insulin was established within a year after its discovery. The value of diphtheria antitoxin was indicated relatively soon after discovery, but its complete acceptance required time for the accumulation of statistics. Other remedies for disease, from which much was expected from preliminary reports, sometimes have been studied for years and then found ineffective and discarded. The progressive physician will be alert to secure for his patients the benefit of new discoveries, but he cannot safely allow his hopes to outweigh his judgment. He will pass by those drugs, new or old, which are unpromising and will employ those whose value is supported by well controlled scientific evidence.

#### EXOTOXINS OF HEMOLYTIC STREPTOCOCCI

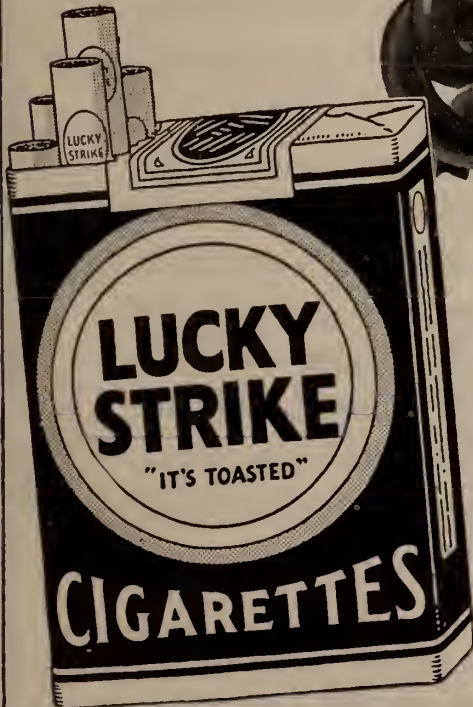
Anna W. Williams, New York (*Journal A. M. A.*, Nov. 16, 1929), asserts that in the making of antitoxic serums to be used in treating hemolytic streptococcus exotoxin infections, theoretically it would be well to use a strain of streptococcus having maximum exotoxin producing qualities; but practically any strain of hemolytic streptococcus showing an ability to produce an exotoxin will, given a responsive horse, stimulate the production of an antitoxin serum that will be effective in all but the exceptional case. It is well, however, for the practicing physician to bear in mind that these exceptional cases do occur, and that they may explain the occasional lack of response to the antitoxic serum.



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